

Family Soleidae

2343

Body oblong or ovate, color on right side. Eyes moderate or small, upper more or less advanced, on right side and separated by distinct bony ridge. Mouth small, more or less twisted towards blind side. Teeth little developed, in villiform band. Preopercle edge adnate, usually concealed by skin and scales. Gill opening more or less narrowed. Gill membranes adnate to shoulder girdle above. Scales usually ctenoid, rarely absent. Blind side of head usually with fringes. Lateral line straight, usually



22157. Cammahala Bay, Ragay Gulf. <sup>757</sup>  
March 11, 1909. Length 90 mm.

18860. Inamucan Bay. August 8, 1909.  
Length 91 mm.

15960. Masbate Reef. April 20, 1908.  
Length 84 mm.

17136 and 17137. Murcielagos Bay.  
August 20, 1909. Length 85 to 95 mm.

21602. Pascao, Ragay Gulf. March 9,  
1909. Length 80 mm.

12587. Rapu Rapu Island. June 22, 1909.  
Length 92 mm.

3617 [1272]. Refugio Island, Pasacao,  
Luzon. March 9, 1909. Length 92 mm.

20050. Romblon. March 26, 1908. Length  
88 mm.

4826 [452]. Romblon Harbor. March 25, 1908.  
Length 95 mm.

4751. San Miguel Island, Tabaco Bay.  
June 4, 1909. Length 92 mm.



single: Pectoral small, sometimes absent. Ventrals with long bases, confluent with anal, -one or both sometimes obsolete.

Small fishes of sandy bottoms, those of sufficient size valued as food.



and brilliant blue edge. Pectoral black.  
Ventral with first membrane blue.

Length 139 mm.

(Playfair.)

Quite likely Holacanthus somervillei  
is the young, as it is based on an  
example but 64 mm. long.



# Analysis of Genera

2345

a. Ventrals symmetrical or largely so, largely free from anal; snout not prolonged in hook.

b. Dorsal and anal free from caudal.

c. Pectorals present on both sides.

d. Gill openings on eyed side ends opposite lower edge of lower pectoral bases.

e. Hind dorsal and anal rays short. Solea.

e.<sup>2</sup> Hind dorsal and anal rays more or less elongate and united with caudal fin.

d.<sup>2</sup> Gill opening of eyed side ends opposite upper part of pectoral base. Brachirus.

f. Hind dorsal and anal rays connected only with caudal base; A. 78 to 82. Soleichthys.

f.<sup>2</sup> Hind dorsal and anal rays connected with at least basal third of caudal fin; A. 56 to 71. Zebrias.

g. Scales ctenoid; first dorsal ray not enlarged. Zebrias.  
g.<sup>2</sup> Scales cycloid; first dorsal ray enlarged, free. Cesophia.



2346  
c.<sup>2</sup> Pectorals absent; lateral line  
with more or less distinct  
accessory branch on blind side.

~~f.~~<sup>h.</sup> Ventral free from anal.  
Aseraggodes.

~~f.~~<sup>h.</sup> Right ventral with long  
base, connected with anal.

Pardachirus.  
b.<sup>2</sup> Dorsal and anal confluent with  
caudal.

i.<sup>h.</sup> Pectoral present, well  
developed or rudimentary.

Phyllichthys.

i.<sup>h.</sup> Pectoral absent. Achiroides.

a.<sup>2</sup> Ventrals greatly asymmetrical, right  
one median, elongate and joined to  
anal; snout prolonged in hook.

Heteromycerus.



Genus Solea Duessel

2347

Solea Duessel, Kon. Vet. Akad.

Nya Handl. Stockholm, vol. 27,  
pp. 44, 203, 1806. (Type Pluronectes  
solea Linnaeus, tantotypic.)

Pegusa Günther, Cat. Fishes Brit.

Mus., vol. 4, pp. 462, 467, 1862.

(Type Solea aurantiaca Günther,  
designated by Jordan, Genera of  
Fishes, pt. 3, p. 319, 1919.)

Microbuglossus Günther, Cat. Fishes

Brit. Mus., vol. 4, pp. 462, 471, 1862.

(Type Solea humilis Cantor, designated  
by Jordan, Genera of Fishes, pt. 3,  
p. 319, 1919.)



and 47893

47827 U. S. N. M. New Guinea.

Australian Museum. Length 110 mm.  
2 examples.

52301 U. S. N. M. Samoa. Bureau of  
Fisheries. Length 60 to 132 mm. 4 examples.

56995 U. S. N. M. Pago Pago. Bureau  
of Fisheries. Length 96 to 144 mm. 11 examples.



Eyes on right side. Mouth <sup>2348</sup>  
curved, asymmetrical. Minute  
teeth in left jaws, absent or  
feeble in right jaws. Nostrils of  
blind side not dilated. Gill  
membranes confluent, free from  
isthmus. Scales ctenoid on both  
sides of body. One straight axial  
lateral line. Scales on left side  
of head often partially transformed  
into fringed cutaneous flaps.  
Dorsal and anal rays simple or  
divided, in caudal always branched.  
Dorsal begins on snout. Dorsal  
and anal separated from caudal.  
Both pectorals present. Ventrals



3618. Refugio, Pasacao, Luzon.  
March 9, 1909. Length 95 mm.

1291, 22772. Vitambi Reef. September  
24, 1909. Length 80 to 92 mm.

457. Talissi Island. November 9, 1909.  
Length 101 mm.

[2132] Tomahi Island. December 11,  
1909. Length 33 mm.

17984. Limbe Strait, Celebes. November  
10, 1909. Length 102 mm.



2349

symmetrical or nearly so, not  
united with anal.

Eastern Atlantic, Indian and  
Pacific Oceans. Weber and  
Beaufort have placed Solea  
margaritifer Günther, alleged

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'Cat. Fishes Brit. Mus., vol. 4, p.  
468, 1862.

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to have come from Borneo (evidently  
wrongly), as a synonym of the  
Mediterranean Solea lascaris.



739

3913, 3914, 6555. Port Maricaban.  
July 21, 1908. Length 87 to 113 mm.

413 and [1578]. Port Palapag, near  
northern Samar. June 3, 1909. Length  
102 to 107 mm. 2 examples. Differ from  
Bleeker's figure in dark portions  
entirely black. Front portion of body  
dusky cadmium-above, sulphur on  
belly. Margin adjacent to black posterior  
portion sulphur yellow. Orange spot  
behind eye-above angle of gill opening.  
Opercle flap orange-and dash of same  
across chin and lower eye edge orange.  
Upper edge of soft dorsal very narrowly  
orange; dorsal and anal otherwise black.  
Caudal cadmium, with sulphur basal  
line. Paired fins pale cadmium.



2350

Norman has examined the type  
of Solea indica Günther and

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1 Cat. Fishes Brit. Mus., vol. 4,  
p. 474, 1862 (type locality: "Madras").  
— Day, Fishes of India, pt. 3,  
p. 426, 1877; Fauna British  
India, Fishes, vol. 2, p. 446,  
1889.

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found it to be a wrongly labeled  
example of Achirus lineatus  
(Linnaeus).



Holacanthus bicolor (Bloch).

Chaetodon bicolor Bloch, Naturg. Ansl.

Fische, band 3, 1787, p. 94, plate 206,

fig. 1. Both Indies. — Gmelin, Syst. Nat.

Linn., 1789, p. 1258 (Tropical America

and India). — Walbaum, Arted. Pisc.,

vol. 3, 1792, p. 418 (in Bloch). — Forster,

Fauna Indica, 1795, p. 15. — Schneider,

Syst. Ichth. Bloch, 1801, p. 218 (Tropical

America and East Indies).

Chetodon bicolor Bonnaterre, Tabl. Ichth.,

1788, p. 93, plate 97, fig. 396 (East Indies).

Holacanthus bicolor Lacépède, Hist. Nat.

Pois., vol. 4, 1803, pp. 527, 535 (East Indies).

— Cuvier, Hist. Nat. Poiss., tome 7, 1831, p. 126<sup>167</sup>

(East Indies). — Günther, Cat. Fish. Brit.

Mus., vol. 2, 1860, p. 50 (East Indies). —

Günther, Journ. Mus. Godeffroy, band 2-3,  
left 5-6, 1874, p. 51, plate 39, fig. B (Samoa,

Solomons, Hawaii). — Bleeker, Atlas



Solea trichodactylus (Linnaeus)

Pleuronectes trichodactylus

Linnaeus, Syst. Nat., ed. 10, pt. 1, p.

268, 1758 (type locality: Amboina);

ed. 12, pt. 1, p. 455, 1766. — Bonnaterre,

Tabl. Ichth., p. 73, 1788 (Amboina).

— Gmelin, Syst. Nat. Linn., p. 1226,

1789. — Forster, Fauna Indica,

p. 14, 1795. — Schneider, Syst. Ich.

Bloch, p. 147, 1801 (Amboina). —

Lacépède, Hist. Nat. Poiss., vol. 4,

pp. 596, 641, 1802 (Amboina).

Solea trichodactylus Kaup, Archiv

Naturges., vol. 24, pt. 1, p. 95, 1858

(Paris Museum specimen from

Bengal). — Günther, Cat. Fishes



7965. Danawan and Si Amil Island. September 27, 1908. Length 87 mm.

3885. Gandra Island. September 20, 1909. Length 94 mm.

3635 and 3636. Teomabal. September 18, 1909. Length 80 to 115 mm.

4786. Labuan, Blanda Island. December 14, 1909. Length 110 mm.

3930. Makyan Island. November 29, 1909. Length 81 mm.

4862. Inuvilagos Bay, Mindanao. August 21, 1909. Length 90 mm.

3894. Apol, Mindanao. August 4, 1909. Length 107 mm.

4849, 4850, 21441. Campan, Tapa Island. September 20, 1909.

1 example. Philippines. Length 62 mm.



2352

Brit. Mus., vol. 4, p. 472, 1862 (compiled).  
— Bleeker, Atlas Ichth. Ind. Néerl.,  
vol. 6, p. 17, 1866-72 (copied). —  
Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 5, p. 150, 1929  
(Kaup's specimen).

Monochirus trichodactylus Jouan,  
Mém. Soc. Sci. Nat. Cherbourg, vol.  
13, p. 274, 1867.

— Chu, Biol. Bull. St. John's  
Univ., ~~Shanghai~~ Shanghai, No. 1, p. 93,  
Jan. 1931 (reference).



vertical in last rays. Iris pale or whitish, black of superior blotch only invading above. Supraocular blackish blotch with whitish border in front and behind, also front border of dark body area with broad whitish border. Upper edge of soft dorsal narrowly whitish and lower anal edge narrowly bluish. Pinned fins whitish.

East Indies, <sup>Micronesia,</sup> Melanesia, Polynesia.  
Its coloration is greatly suggestive of the American Holocentrus tricolor.



Solea irrorata Rüppell

Solea irrorata Kuhl, in Rüppell,  
Samm. Senckenberg. Mus., p.  
19, 1852 (type locality: Java Sea).  
— Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 5,  
p. 150, 1929 (note).



736

Depth  $1\frac{7}{8}$  to 2; head  $3\frac{1}{3}$  to  $3\frac{1}{2}$ , width  $1\frac{2}{3}$  to 2. Snout  $2\frac{3}{4}$  to 3; eye 3 to  $3\frac{2}{3}$ , 1 to  $1\frac{2}{5}$  in snout, equal to slightly greater than interorbital; maxillary reaches opposite nostrils, 4 to  $4\frac{1}{3}$  in head; interorbital  $3\frac{1}{2}$  to  $3\frac{3}{4}$ , broadly convex; preopercle spine along upper edge 2 to  $3\frac{3}{4}$ . Gill rakers 4 + 12, lanceolate, short, strong,  $\frac{1}{4}$  of gill filaments, which  $1\frac{1}{5}$  in eye.

Scales 45 to 48 between gill opening and caudal base; 7 or 8 scales above lateral line, 20 to 22 below. Scales with 5 to 12 basal radiating striae; apical denticles 17 to 29, each with long slender rootlet; circuli fine.

D. XIV or XV, 15, I or 16, I, last spine  $1\frac{1}{3}$  to 2 in head, seventh dorsal ray  $2\frac{2}{3}$  to  $3\frac{1}{4}$  in combined head and body; A. III, 17, I or 18, I, third spine  $1\frac{2}{5}$  to  $1\frac{3}{5}$  in head, ninth ray  $2\frac{4}{5}$  to  $3\frac{1}{3}$  in combined head and body; least depth of caudal peduncle  $1\frac{1}{8}$  to  $2\frac{1}{10}$  in head; caudal convex behind, 1 to  $1\frac{1}{10}$ ; pectorals, 1 to  $1\frac{1}{8}$ ; ventral 3 to  $3\frac{3}{4}$  in combined head and body.

Anterior  $\frac{2}{5}$  of body yellowish-white, also hind half of caudal peduncle and entire caudal fin. From occiput broad blackish-brown band to eye. Posterior half of trunk and tail blackish-brown, each scale within its area with dark blue basal blotch; also vertical fins with dark blue transverse or oblique dark lines, most distinct and nearly



Solea elongata Day

Solea elongata Day, Fishes of India,  
pt. 3, p. 426, pl. 90, fig. 4, 1877  
(type locality: Madras); Fauna  
British India, Fishes, vol. 2, p.  
445, 1889. — Norman, Rec. Indian  
Mus., vol. 30, pt. 2, p. 175, fig. 1a  
(blind side of head), July 1928  
(north end of Persian Gulf; Persian  
Gulf; Trincomali, Ceylon).



2355

Solea heimii Steindachner

Solea heimii Steindachner, Denks.  
Akad. Wiss. Wien, math.-nat. Kl.,  
vol. 71, p. 153, pl. 1, fig. 3, 1902  
(type locality: Gischin, south  
Arabia). — Norman, Rec. Indian  
Mus., vol. 30, pt. 2, p. 176, July  
1928 (Mekran coast; type of  
Solea sindensis).

Solea sindensis Jenkins, Rec.  
Indian Mus., vol. 5, p. 133, 1910  
(type locality: Karachi); Mem.  
Indian Mus., vol. 7, pl. 3, fig. 2,  
1910.



Solea ovata Richardson 2356

Solea ovata Richardson, Ichth.

China Japan, p. 279, 1846 (type locality: China Seas; Canton).

— Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1202, 1849 (1850) (Pinang Sea). — Günther, Cat.

Fishes Brit. Mus., vol. 4, p. 472, 1862 (China). — Day, Fishes of India, pt. 3, p. 426, pl. 93, fig. 1, 1877 (Madras). — Günther, Rep.

Voy. Challenger, vol. 1, pt. 6, p. 53 (Philippines), p. 55 (off Hong Kong), 1880. — Day, Fauna British India, Fishes, vol. 2, p. 445, 1889. — Alcock,

Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, no. 3, p. 285, 1889 (Bengal Bay). — Seale, Philippine Journ. Sci., vol. 9, p. 78, 1914 (Hong

Kong). — Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 176, fig. 2, July 1928 (Vasco Bay, Portuguese India; and Sandy Bay,



Madras; Orissa) . — Wu, Contrib. <sup>2357</sup>  
Biol. Lab. Sci. Soc. China, vol. 5,  
no. 4, p. , 1929 (Amoy) . — Chu,  
Biol. Bull. St. John's Univ.  
Shanghai, no. 1, p. 92, Jan. 1931  
(reference).

Solea (Microbuglossus) ovata  
Bleeker, Nederl. Tijds. Dierk.,  
vol. 4, p. 130, 1873 (1874) (Canton;  
Amoy).

Solea humilis Cantor, Journ. Asiatic  
Soc. Bengal, vol. 18, pt. 2, p. 1201, 1849  
(1850) (type locality: Sea of Pinang).  
— Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 471, 1862 (type; Pinang;  
Bleeker's specimen) . — Kner,  
Reise Novara, Fische, p. 288, 1865  
(“Sidney” [error]) . — Bleeker,  
Atlas Ichth. Ind. Néerl., vol. 4,  
p. 16, pl. (6) 237, fig. 11 (Java;  
Pinang) . — Weber and Beaufort,



Fishes Indo Austral. Archip., vol.  
5, p. 148, 1929 (Java Sea; Java).  
Microbuglossus humilis Jordan  
and Seale, Bull. Bur. Fisher.,  
vol. 46, p. 26, 1906 (1907) (Cavite).  
— Jordan and Richardson, Bull.  
Bur. ~~Fish.~~ Fisher., vol. 27, p. 54,  
1907 (1908) (Manila). — Seale,  
Philippine Journ. Sci., vol. , p.  
287, 1910 (Sandakan, Borneo). —  
McCulloch, Austral. Mus. Mem.,  
no. 5, pt. 2, p. 283, Sep. 10, 1929  
(reference).

Solea maculata Kuhl and Van Hasselt,  
in Bleeker, Natuurk. Tijds. Ned.  
Indië, vol. 1, p. 409, 1851 (type  
locality: Batavia; name in  
synonymy). — Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 95, 1858  
(Java).



Depth  $2\frac{1}{5}$  to  $2\frac{1}{4}$ ; head  $3\frac{2}{3}$  to  $3\frac{7}{8}$ , width 3 to  $3\frac{1}{4}$ . Snout end to lower orbit  $3\frac{1}{5}$  to  $3\frac{1}{4}$  in head; lower orbit  $4\frac{1}{2}$  to  $4\frac{2}{3}$ ,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in snout; upper orbit advanced  $\frac{1}{3}$  to  $\frac{2}{5}$  from lower; mouth cleft extends  $\frac{2}{5}$  to  $\frac{1}{2}$  in lower orbit; length  $2\frac{3}{4}$  to 3 in head; <sup>nasal tube large as pupil;</sup> scaly interorbital  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in lower orbit, concave. Gill rakers 3 + 9 short rudimentary points; gill filaments  $1\frac{1}{5}$  in lower orbit.

Scales 88 to 90 in lateral line from above gill opening to caudal base and 7 or 8 more on latter (7 more forward to dorsal intersection); 32 above, 40 to 42 below. All scales ctenoid. Scales with 8 or 9 basal radiating



Cuv 179 Lethrinus hypselopterus Bleeker

Lethrinus hypselopterus Bleeker, Nederl.

Tijdschr. Dierk., vol. 4, 1873, p. 326.

Benculen, Sumatra; Singapore; Java;

Abi major; Solor; Waigiu; Atlas Ichth.

Ind. Néerland., vol. 8, 1876-77, p. 114,

pl. (52) 330, fig. 3 (Sumatra, Singapore,

Java, Abi major, Solor, Waigiu).  $\frac{1}{m}$

→ Evermann and Seale, Bull. Bur. Fisher.,

vol. 26, 1906 (1907), p. 86 (Philippines).  $\frac{1}{m}$

Herre and Montalban, Philippine Journ.

Sci., vol. 33, no. 4, 1927, p. 419, pl. 4, fig. 1

(Zamboanga and Davao; Tambagaan and

Bungan Island).  $\frac{1}{m}$  Fowler, Proc. Acad.

Nat. Sci. Philadelphia, 1927, p. 282 (Santa

Maria; Calapan); Mem. Bishop Mus.,

vol. 10, 1928, p. 216 (compiled).



striae; 9 or 10 long slender apical denticles with 4 series transverse of basal elements; circuli fine, continuous. Lateral line on both sides, continuous. Blind side of head anteriorly with many billose slender cutaneous flaps or tentacles.

D. 57 to 59, fin height  $1\frac{9}{10}$  to  $2\frac{1}{8}$  in head; A. 42 or 43, fin height  $1\frac{7}{8}$  to 7; caudal  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , rounded behind; pectoral  $1\frac{4}{5}$  to  $2\frac{1}{8}$ ; ventral  $2\frac{7}{8}$  to 3.

Right side mouse gray to drab, mottled or speckled with dark brown to neutral black. Along dorsal base on body 6 or 7 gray white blotches also similar series on body above anal base. Orbits dark neutral gray. Dark



fifth ray  $2\frac{1}{2}$ ; A. III, 8 or 9, third spine  $3\frac{1}{5}$ , first ray  $2\frac{1}{3}$ ; caudal  $1\frac{1}{4}$ , slightly emarginate; least depth of caudal peduncle 3; pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$ .

Olivaceous above, below yellowish rosy. Iris yellowish. Snout and cheeks without spots or lines. Above middle of pectoral below lateral line round blackish brown blotch. Ten or 11 transverse dark bands on body. Fins golden or yellowish pink, except pectoral rays all marked with dark spots. Length 115 mm. (Bleeker.)

East Indies, Philippines, Micronesia. Herre and Montalban report it to 131 mm. in length.



or blackish specks of body  
extend over vertical fins.

Pectoral mottled gray and darker,  
more or less blackish terminally.  
Ventral like anal. Left side  
whitish, dark specks on vertical  
fins grayish, obsolete. Left  
paired fins whitish.

India, Malaya, East Indies,  
Philippines, China.



Abstract, vol. 1, no. 5, March 31, 1927, p. 131  
 (compiled). <sup>1</sup>/<sub>m</sub> Herre and Muntalban,  
 Philippine Journ. Sci., vol. 33, no. 4, Aug.  
 1927, p. 404, pl. 2, fig. 1 (Orani, Tendo,  
 Calapan, Bacon, Concepcion, Dipoloy).  
<sup>1</sup>/<sub>m</sub> Fowler, Mem. Bishop Mus., vol. 10, 1928,  
 → p. 216 (part; not Upia specimen). —  
Lethrinus jagorii Peters, Monatsber. Akad.  
 Wiss. Berlin, 1868, p. 257. Paracali, Luzon.  
<sup>1</sup>/<sub>m</sub> Bleeker, Nederland. Tijdschr. Dierk.,  
 vol. 4, 1874, p. 332 (compiled).

Depth  $3\frac{1}{3}$ ; head  $2\frac{7}{8}$ . Snout 2 in head;  
 eye  $3\frac{1}{3}$ ,  $1\frac{3}{5}$  in snout, maxillary reaches  
 $\frac{4}{5}$  to eye, length  $2\frac{4}{5}$  in head; teeth  
 conic; interorbital low.

Scales 48 in lateral line, 5 above,  
 15 below, predorsal scales extending  
 forward opposite hind eye edge; few  
 small scales on postocular.

D. X, 9 or 10, third spine  $2\frac{1}{2}$  in head,



2322

8044 to 8046. Manila market.  
March 18, 1908. March 18, 1908.  
Length 35 to 58 mm.

6966. Manila market. April 14, 1909.  
Length 39 mm.

19757. Manila market. April 20, 1909.  
Length 50 mm.

2 examples. Manila market. April  
21, 1909. Length 34 to 40 mm.

11960, 11961. Manila market.  
April 22, 1909. Length 43 to 48 mm.

1 example. Manila market. April  
29, 1909. Length 44 mm.

20650. Manila market. June 13, 1908.  
Length 46 mm.

9080. Manila market. June 24, 1908.  
Length 49 mm.



19426. <sup>2363</sup> Vorsegon market. March  
12, 1909. Length 71 mm.

20234. Sandakan Bay, Borneo.  
March 2, 1908. Length 62 to 67 mm.



Genus Brachirus Swainson

2364

Brachirus Swainson, Nat. Hist. Animals, vol. 2, p. (187) 303, 1839. (Type, Pleuronectes orientalis Schneider, designated by Swain, Proc. Acad. Nat. Sci. Philadelphia, 1883, p. 281.)

Synaptura Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1204, 1849 (1850). (Type, Pleuronectes orientalis Schneider, virtually as Synaptura Cantor proposed to replace Brachirus Swainson.)

Solenoides Bleeker, in Kaup, Archiv Naturges., vol. 24, pt. 1, p. 97, 1858 (name in synonymy). (Type, Pleuronectes orientalis Schneider, here affixed.)

Euryglossa Kaup, Archiv Naturges., vol. 24, pt. 1, p. 99, 1858. (Type, Pleuronectes orientalis Schneider, monotypic.)



Anisochirus Günther, Cat. Fishes<sup>2365</sup>  
Brit. Mus., vol. 4, pp. 480, 486,  
1862. (Type, Synaptura panoides  
Bleeker, designated by Jordan,  
Genera of Fishes, pt. 3, p. 319,  
1919.)

Eyes on right side. Mouth  
curved, snout often overhanging  
and mouth cleft forming hobb.  
minute teeth in jaws of left  
side. Front nostril of colored  
side at end of shorter or larger  
tube, posterior ones covered by  
flap; nostril of blind side  
more or less hidden by cutaneous  
flap. Gill membranes united,  
free from isthmus. Scales ctenoid  
on colored side, cycloid - or  
ctenoid on blind side. Straight  
axial lateral line on both sides  
of body. Scales on left side of  
head often formed as cutaneous



filaments. Lower lip of colored side usually fringed. Dorsal begins on snout. Dorsal and anal confluent with caudal. Rays of vertical fins simple or divided at tips. Pectoral with well developed rays, with short base and free from branchiostegal membranes; or with broad base, rudimentary rays and connection through a folded membrane with upper part of branchiostegal membranes, forming kind of funnel-like access to branchial cavity. Ventrals short, broad based, free from each other and anal; or right ventral connected with low membrane at its hind end with genital papilla or with anal.



2367

Indian and Western Pacific  
Oceans, some species entering  
fresh water. I accept the name  
Brachirus Swainson for these  
fishes, notwithstanding the  
contention that Brachyurus  
of the same author is a name  
with similar meaning. It is  
spelled differently and  
therefore Brachyurus may be  
allowed distinct. Jordan and  
Goss in 1889 make the mistake  
in citing Pleuronectes zebra  
Bloch as the type of Brachirus,  
therefore not following Swain's  
designation of 1883, which they  
also refer to.



2368

Brachurus lipophthalmus (Károli)

Synaptura lipophthalma Károli,  
Termesz. Füzetek, Budapest,  
vol. 5, p. 30, 1882 (type locality:  
Larawak, Borneo). — Weber and  
Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 179, 1929  
(copied).



2369

The following nomina nuda,  
mentioned by Saville Kent,  
likely belong in this genus:

Synaptura armata Saville-Kent,  
Great Barrier Reef, p. 370, 1893  
(type locality: Queensland).

Synaptura inermis Saville-Kent,  
Great Barrier Reef, p. 370, 1893  
(type locality: Queensland).



Brachirus albomaculatus (Kaup)<sup>2370</sup>

Synaptura albomaculata Kaup,  
Archiv Naturges., vol. 24, pt. 1, p. 96,  
1858 (type locality: Coromandel). —  
Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 483, 1862 (East Indies). —  
Day, Fishes of India, pt. 3, p. 429,  
pl. 93, fig. 5, 1877 (Madras); Fauna  
British India, Fishes, vol. 2, p.  
448, fig. 161, 1889. — Norman, Rec.  
Indian Mus., vol. 30, pt. 2, p. 179,  
July 1928 (Madras, Canara, Puri,  
Gujarat, Sundarbans, Akyab,  
Coromandel, Vizagapatam).  
Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 5, p. 169, 1929  
(Akyab, India), p. 430 (reference).

Brachirus albomaculatus ←



2371

Brachirus annularis new species

Depth 3; head 5 to  $5\frac{1}{8}$ , width 3. Snout to lower orbit  $3\frac{3}{4}$  to  $4\frac{1}{3}$  in head; lower orbit  $5\frac{2}{3}$  to  $6\frac{1}{2}$ ,  $1\frac{1}{4}$  to  $1\frac{2}{5}$  in snout,  $\frac{1}{5}$  to  $\frac{1}{4}$  in advance of upper orbit; maxillary reaches  $\frac{1}{3}$  in lower orbit, length 3 to  $3\frac{2}{5}$  in head; right nasal tube long as pupil; interorbital scaly area wide as lower orbit length. Gill rakers about 4 + 8 very low feeble papillae; gill filaments  $1\frac{1}{4}$  in lower orbit.

Scales 77 or 78 from above gill opening in lateral line to caudal base; 29 or 30 above, 37 or 38 below, in each case counted to bases of vertical fins.



Family Lethrinidae *Cue 121*

17

Body ovate or oblong, compressed. Head compressed, pointed. Mouth low, terminal, little inclined, protractile. Maxillary without supplemental bone, mostly slips below deep preorbital. Upper teeth of jaws laterally uniserial, conic or molar. and inner anterior teeth villiform. Palate and tongue toothless. Nostrils paired. Gill membranes broadly united, free from isthmus. Gills 4, slit behind fourth. Pseudobranchiae present. Gill rakers short, knob like. Scales ctenoid, moderate in size. Lateral line simple. Subocular shelf vestigial or small. Pyloric coeca few. Cheeks naked. Top of head naked. Ventral with axillary scale. Dorsal continuous, soft and spinous parts subequal. Anal like soft dorsal. Dorsal spines 10. Caudal emarginate or lunate.



Many short filaments along lower blind edge of head. Fins all more or less scaly basally. Scales with 4 or 5 basal divergent radiating striae; 5 to 8 long strong apical denticles, with 3 or 4 transverse series of basal elements, circuli fine. Scales ctenoid on both sides.

D. 68 to 70, fin height  $1\frac{4}{5}$  to 2 in head; A. 56 or 57, fin height  $1\frac{4}{5}$  to 2; caudal  $1\frac{1}{8}$  to  $1\frac{1}{6}$ , rounded behind; pectoral  $4\frac{4}{5}$  to 6, upper ray much longest and others short and feeble, no left pectoral; left ventral  $3\frac{1}{3}$  to 4; anal papilla little shorter than nasal tube.

Left side fawn color shading isabella color along and on bases of vertical fins. Broad chocolate line define large slightly darker areas than body color. Chocolate



16

dark bands over each lobe. Anal  
pale, blackish on spinous membranes  
terminally, over most of last one  
and first soft dorsal membrane.  
Pectoral pale. Ventral largely  
blackish on membranes, especially  
terminally.

Formosa, Japan.

38817 U.S.N.M. Tokyo market.  
Educational Museum of Japan. Length  
133 mm.



line from front of upper eye to  
 upper front edge of snout then  
 slopes down to snout tip; another  
 chocolate line transversely above  
 and behind upper eye, then  
 curves down below ~~under~~ <sup>lower</sup> eye  
 to chin; third line transversely  
 above opercle and then down  
 close behind gill opening. On  
 body and tail 7 large blotches  
 of slightly deeper shade than  
 body color and all ringed or  
 bordered by chocolate, so arranged  
 as 2 above lateral line and 2  
 below, one including caudal and  
 the other 2 on lateral line,  
 with first twice size of second.  
 All 5 large marginal blotches ~~are~~  
 extended on vertical fins,  
 also on body each with <sup>1 or 2</sup> small



$1\frac{3}{4}$ , second ray  $2\frac{1}{10}$ ; caudal  $1\frac{3}{5}$ , slightly emarginate behind; least depth of caudal peduncle  $5\frac{1}{10}$ ; pectoral  $1\frac{1}{8}$ ; ventral 1.

Light brown, with about 8 obscure ill defined longitudinal darker bands, paler intervals on lower and under surfaces of head and body whitish. In front of head 2 dark brown bands cross interorbital connecting eyes and medially also connected by short dark brown bar; 2 bands cross snout and 1 across occipital, besides 2 others above on predorsal. Iris pale yellowish. Spinous dorsal membranes dark brown, dusky marginally and large blackish blotch over eighth and ninth. Soft dorsal pale, with 2 brown blotches and large black apical blotch. Hind preopercle edge dusky in emargination, with 2 obscure



median dark round spot of chocolate, along dorsal and anal edges of body between large annular bordering blotches 1 or 2 spots above and as many below each of <sup>2</sup>annular blotches on lateral line. Vertical fins dusky or neutral brown marginally and in intervals between chocolate bordering line often a small marginal annulus or dark spot. Caudal with chocolate bar above and another below, delimiting more or less upper and lower portions. Orbits gray.

Diagnosis. Related to B. rachius panoides (Bleeker), B. orientalis (Schneider) and B. villosus (Weber) in having the eyes separated by a scaly



14

enlarged, in about 5 or 6 irregular series transversely in jaws; triangular band of rather large, low, obtuse teeth on vomer; interorbital  $4\frac{1}{10}$ , nearly level; preopercle edge denticulate, several of denticles little enlarged at angle. Gill rakers  $6+15$ , lanceolate,  $1\frac{1}{8}$  in gill filaments, which  $2\frac{2}{3}$  in eye.

Scales 55 in lateral line to caudal base and 6 more on latter; tubes 40 in lateral line to caudal base and 4 more on latter; 12 scales above lateral line, 21 below, 10 rows on cheeks to preopercle ridge. Scales with 7 or 10 basal radiating striae; 37 apical denticles, with 7 transverse series of basal elements; circuli fine.

D. X, 12, I, third spine  $1\frac{1}{10}$  in head, second ray  $2\frac{1}{5}$ ; A. III, 7, I, second spine



2375

interorbital space. It differs,  
however, from these as well  
as all the species of the genus  
in the presence of large rings,  
enclosing darker areas, on the  
left side of the body.

~~Stylocheilichthys~~

A. V. N. M., No. , type.

1348 (type) [695], 1347  
(paratype) [696]. D. 5315. China  
Sea, vicinity of Formosa  
(lat.  $21^{\circ} 40' N.$ , long.  $116^{\circ} 58' E.$ ).  
In 148 fathoms. November 5,  
1908. Length 137 to 151 (type)  
mm.



Brachirus annularis new species



11-10-43

Pages 2371 through 2375 either mis-  
numbered or missing.

C. Wade



Brachirus aspiroz (Bleeker)

Synaptura aspiroz Bleeker, Natuurk.  
Tijds. Ned. Indië, vol. 3, p. 74, 1852  
(type locality: Singapore); Verh.  
Batavia. Genootsch., no. 9, vol. 24, p.  
29, 1852 (Singapore). — Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 97, 1858  
(reference). — Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 482, 1862 (no  
locality). — McCulloch, Austral. Mus.  
Mem., no. 5, pt. 2, p. 285, Sep. 10, 1929  
(compiled).

Synaptura aspiroz Weber, Siboga Exped.,  
vol. 57, p. 440, 1913 (Salomakie). —  
Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 5, p. 170, 1929  
(Singapore, Dammur, Aru).

Brachirus aspiroz Ogilby, Proc. Roy. Soc.  
Queensland, vol. 23, p. 36, 1910 (Crocker  
Island, North Australia). ✓

— Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p.  
294, June 15, 1926 (compiled).

Archiv Naturges., vol. 24, pt. 1, p. 97, 1858  
(name).



Brachirus aspilos (Bleeker)

Synaptura aspilos Bleeker, Natuurk.  
Tijds. ned. Indië, vol. 3, p. 74, 1852  
(type locality: Singapore); Verh.  
Batavia. Genootsch., no. 9, vol. 24, p.  
29, 1852 (Singapore). — Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 97, 1858  
(reference). — Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 482, 1862 (no  
locality). — McCulloch, Austral. Mus.  
Mem., no. 5, pt. 2, p. 285, Sep. 10, 1929  
(compiled).

Synaptura aspius Weber, Siboga Exped.,  
vol. 57, p. 440, 1913 (Salomakie). —  
Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 5, p. 170, 1929  
(Singapore, Dammur, Aru).

Brachirus aspilos Ogilby, Proc. Roy. Soc.  
Queensland, vol. 23, p. 36, 1910 (Crocker  
Island, North Australia). ✓

Synaptura marmorata Bleeker, Natuurk.  
Tijds. ned. Indië, vol. 5, p. 90, 1853  
(type locality: Lawajong, Solor). — Kaup,  
Archiv Naturges., vol. 24, pt. 1, p. 97, 1858  
(name).



2070. Endeavor Strait. April 3, 1908.

Length 360 mm.

7504. Endeavor Strait. December 22, 1908

on (most)  
light (type)  
good (type)  
Shinobu  
Sakana



2377

Synaptura heterolepis Bleeker, Act.  
Soc. Sci. Ind. Néerl. (Amboina), vol.  
1, p. 65, 1856 (type locality: Amboina).  
— Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 482, 1862 (Amboyna);  
Brachirus heterolepis Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 20, pl. (5)  
236, fig. 2, pl. (7) 238, 1866-72  
(Singapore, Solor, Batjan, Timor,  
Ceram, Amboina). — Fowler, Mem.  
Bishop Mus., vol. 10, p. 95, 1928 (compiled).

Journ. Mus. Godeffroy, vol. 8, pt. 16,  
p. 347, 1909 (New Pommernia).



2378

Depth  $2\frac{1}{3}$  to  $2\frac{2}{5}$ ; head  $4\frac{2}{3}$  to  $4\frac{4}{5}$ , width  $3\frac{1}{3}$  to  $3\frac{2}{3}$ . Snout end to lower orbit  $2\frac{3}{4}$  to 3 in head; lower orbit  $5\frac{1}{2}$  to 7,  $1\frac{7}{8}$  to 2 in snout; upper orbit  $\frac{1}{3}$  to  $\frac{1}{2}$  in advance of lower; mouth cleft curved, reaches  $\frac{1}{3}$  to  $\frac{2}{5}$  in lower orbit, length from snout tip  $2\frac{3}{4}$  to 3 in head from snout end; scaly interorbital 7 to  $7\frac{1}{2}$ ,  $1\frac{1}{5}$  to  $1\frac{1}{2}$  in lower orbit, concave. No gill rakers; gill filaments long as lower orbit.

Scales from above gill opening 72 to 74 to caudal base (10 or 11 more tubular forward on head towards upper eye to dorsal intersection); 32 or 33 above, 37 or 38 below. Right scales ctenoid, left cycloid. Scales with 9 to 11 basal radiating striae; 7 or 8 rather long diverging apical denticles, with 2 or 3 series transversely of basal elements; circuli fine. Lateral line complete on both sides of body.



D. 64 to 68, fin height  $1\frac{4}{5}$  to  $2\frac{1}{8}$  in head; A. 52 to 55, fin height  $1\frac{1}{2}$  to  $1\frac{4}{5}$ ; caudal  $1\frac{1}{3}$  to  $1\frac{3}{5}$ ; right pectoral  $2\frac{1}{2}$  to  $3\frac{1}{4}$ ; right ventral  $2\frac{1}{2}$  to 3.

Largely unbar on right side, mottled with paler. Body color extends vertical fins, all of which with narrow white border formed by white tip to each ray. Orbits slate. Pectoral gray or gray white, marginally, medially blackish. Right ventral brown. Left side whitish, vertical fins blackish brown submarginally, with narrow whitish edge all around formed by white tips of rays.

Malaya, Siam, East Indies, Philippines, North Australia, Melanesia.

8410. Cebu market, Cebu. March 19, 1909. Length 298 mm.

8455. Cebu market. March 27, 1909. Length 346 mm.



21757. Cebu market, Cebu.

March 28, 1909. Length 144 mm.

9315. Cebu market. August 16, 1909.  
Length 254 mm.

4690, 4691. Masugba Bay.

January 16, 1908. Length 170 to 195 mm.

20698. Ulugan Bay near mouth  
of Baheli River, Palawan. December  
28, 1908. Length 148 mm.

5106. Sandakan Bay, Borneo.  
March 3, 1908. Length 178 mm.



2381

Brachius breviceps Ogilby

Brachius breviceps Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 36, 1910 (Type locality: Rockhampton, Queensland).

(Synaptura breviceps McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 285, Sep. 10, 1929 (reference).

— Norman, Biol. Res. Endeavour, vol. 15, pt. 5, p. 295, June 15, 1925 (compiled).



Brachirus callizona (Regan)

2382

Synaptura callizona Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 57, pl. 6, fig. 2, 1903 (type locality: Arafura Sea). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 173, 1929 (Java Sea, Madura, Arafura Sea).



2383

Brachirus cancellatus (McCulloch)

Synaptura cancellata McCulloch, Mem.  
Queensland Mus., vol. 5, p. 60, pl. 8, fig.  
1, July 10, 1916 (type locality: near  
Freemantle, Western Australia); Austral.  
Mus. Mem., no. 5, pt. 2, p. 285, Sep. 10,  
1929 (reference). — Norman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 296, June 15, 1926  
(compiled).



Brachirus commersoni (Lacépède)<sup>2384</sup>

Pleuronectes commersonnien Lacépède,  
Hist. nat. Poiss., vol. 3, pl. 12, fig. 2, 1800  
(not Pleuronectes commersonii Lacépède,  
Hist. nat. Poiss., vol. 4, pp. 599, 654, 1802).

Brachirus commersoni Swainson, Nat. Hist.  
Animals, vol. 2, p. 303, 1839 (on Jerree  
Potoo A. Russell, Fishes of Coromandel,  
vol. 1, p. 55, pl. 70).

↑ — Norman, Rec. Indian Mus., vol. 30, pt.  
2, p. 178, July 1928 (South Canara,  
Madras, Alibab, Karachi).

vol. 24, pt. 1, p. 96, 1858 (Paris Museum).  
— Günther, Cat. Fishes Brit. Mus., vol.  
4, p. 483, 1862 (Pinang). — Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 18, pl. (4)  
235, fig. 3, 1866-72 (Java, Singapore,  
Pinang, Borneo). — Day, Fishes of India,  
pt. 3, p. 428, pl. 94, fig. 1; Fauna British  
India, Fishes, vol. 2, p. 448, 1899. —  
Jenkins, Mem. Indian Mus., vol. 3, p. 29,  
1910. — Weber and Beaufort, Fishes Indian



Brachirus commersoni (Lacépède) <sup>2384</sup>

Pleuronecte commersonnien Lacépède,  
Hist. nat. Poiss., vol. 3, pl. 12, fig. 2, 1800  
(not Pleuronectes commersonii Lacépède,  
Hist. nat. Poiss., vol. 4, pp. 599, 654, 1802).

Brachirus commersoni Swainson, Nat. Hist.  
Animals, vol. 2, p. 303, 1839 (on Jerree  
Potoo A. Russell, Fishes of Coromandel,  
vol. 1, p. 55, pl. 70,

Synaptura commersoniana Cantor, Journ.  
Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1204,  
1849 (1850) (Pinang Sea, Malay Peninsula,  
Singapore). — Kaup, Archiv Naturges.,  
vol. 24, pt. 1, p. 96, 1858 (Paris Museum).  
— Günther, Cat. Fishes Brit. Mus., vol.  
4, p. 483, 1862 (Pinang). — Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 18, pl. (4)  
235, fig. 3, 1866-72 (Java, Singapore,  
Pinang, Borneo). — Day, Fishes of India,  
pt. 3, p. 428, pl. 94, fig. 1; Fauna British  
India, Fishes, vol. 2, p. 448, 1899. —  
Jenkins, Mem. Indian Mus., vol. 3, p. 29,  
1910. — Weber and Beaufort, Fishes Indian



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Chicago  
Hymenit  
vol. 1, p.  
1849 (18  
Chicago  
Hymenit  
vol. 1, p.  
1849 (18  
Chicago  
Hymenit  
vol. 1, p.

Suppl. rapp. Soc. h. n. Lawrence, 1836, p. 55.



Archip., vol. 5, p. 168, 1929 (Sumatra; <sup>2385</sup>Java).

Synaptura commersoni Jerdon, Madras  
Journ. Lit. Sci., vol. 17, no. 39, p. 148,  
1851 (1853).

Solea russellii Bleeker, Natuurk. Tijds.  
Ned. Indië, vol. 1, p. 401, 1851 (type  
locality: Batavia); Verh. Batavia.  
Genoot., no. 9, vol. 24, p. 15, 1852  
(<sup>copied</sup>~~Batavia~~).

Synaptura russellii Bleeker, Verh.  
Batavia. Genoot. (Bengal. Hind.), vol.  
25, p. 76, 1853 (reference).

Solea bimarginata Van Hasselt, in  
Bleeker, Atlas Ichth. Ind. Néerl.,  
vol. 6, p. 19, 1866-72 (type locality;  
Pondicherry). (name in synonymy.)



2382

Brachius craticulus (McCulloch)

Synaptura craticulus McCulloch, Mem.  
Queensland Mus., vol. 5, p. 62, pl. 9, fig. 1,  
July 10, 1916 (type locality: near Bowen,  
Queensland); Austral. Mus. Mem.,  
vol. 5, pt. 2, p. 285, Sep. 10, 1929  
(reference). — Horman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 296, June 15,  
1926 (reference).



Brachirus fasciatus (Macleay)<sup>2387</sup>

Synaptura fasciata Macleay, Proc. Linn.  
Soc. New South Wales, vol. 7, pt. 1, p. 14,  
May 23, 1882 (type locality: Port Jackson);  
Mc Culloch, Austral. Mus. Mem., no. 5,  
pt. 2, p. 285, Sep. 10, 1929 (reference).

(— Ogilby, Cat. Fish. New South Wales, p. 33,  
1887. — Waite, Mem. Austral. Mus., vol.  
4, p. 126, pl. 31, 1899. — Stead, Edible  
Fish. New South Wales, p. 107, 1908.

— Mc Culloch, Mem. Queensland Mus.,  
vol. 5, p. 61, pl. 8, fig. 2, 1916; Austral.  
Zool., vol. 2, p. 46, pl. 13, 1921. — Horman,  
Biol. Res. Endeavour, vol. 5, pt. 5, p. ~~45~~,  
~~46~~, 295, June 15, 1925 (compiled). —



Brachius fitzroiensis (De Vis)<sup>2388</sup>

Synaptura fitzroiensis De Vis, Proc.  
Linn. Soc. New South Wales, vol. 7, pt. 3,  
p. 319, Oct. 28, 1883 (type locality:  
Fitzroy River, Queensland); McCulloch,  
Mem. Austral. Mus., no. 5, pt. 2, p.  
286, Sep. 10, 1929 (reference).



2389.

Brachirus megalepidoura new species

Depth  $2\frac{1}{5}$  to  $2\frac{2}{5}$ ; head  $4\frac{1}{2}$  to  $4\frac{7}{8}$ , width 3 to  $3\frac{1}{4}$ . Snout end to lower orbit  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in head; lower orbit  $5\frac{2}{5}$  to 6, 1 to 2 in snout, <sup>maxillary</sup> reaches  $\frac{1}{4}$  to  $\frac{2}{5}$  in lower orbit, <sup>mouth cleft</sup> length  $2\frac{4}{5}$  to  $3\frac{1}{5}$  in head; interorbital  $2\frac{1}{2}$  to 3 in lower orbit. Gill rakers absent; gill filaments subequal with lower orbit.

Scales 62 to 66 in lateral line, <sup>from above gill opening</sup> to caudal base (8 or 9 more forward on head to dorsal intersection); 28 or 29 above, 26 to 28 below. All scales strongly ctenoid. Along lateral line posteriorly scales all more or less enlarged, those directly above and below largest. Vertical fins all finely scaled basally on both sides of body. Scales of right side with scattered, slender, dark, cutaneous filaments, usually small patch at caudal base. Scales with 20 to 30 nearly parallel basal striae;



2390

17 to 30 slender apical denticles, with  
1 to 3 transverse series of basal  
elements; circuli fine.

<sup>in head</sup> D. 59 to 61, fin height  $1\frac{2}{3}$  to  
 $2\frac{1}{4}$ ; A. 47 to 49, fin  $1\frac{7}{8}$  to 2;  
caudal  $1\frac{1}{5}$  to  $1\frac{3}{5}$ , convex behind;  
pectoral  $6\frac{1}{2}$  to 7; ventral 3 to  $3\frac{3}{4}$ .

Right side brown, more or less  
uniform, only relieved by few scattered  
tufts of dark filaments producing  
somewhat spotted appearance. Orbits  
gray. Left side paler to whitish,  
with vertical fins submarginally  
dark brown, rays narrowly tipped  
with whitish.

Diagnosis. Most closely related  
to Brachius macrolepis (Bleeker),  
especially as figured by Norman  
from an example 135 mm long from  
Orissa. My species differs at  
once in the greatly smaller scales  
on the head and the greatly  
enlarged scales about the lateral  
line or medial axis of the body  
in its posterior half. Moreover



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all the scales about the edges of the body over the bases of all the vertical fins are greatly reduced, very numerous and crowded. They not only extend on the fin rays but also nearly over the entire basal half of all the vertical fins. They have in addition a few widely scattered small dark spots on both fins and body on the right or colored side due to scattered patches of blackish filaments.

U. S. N. M., No. , type.

1819, 1820, 1822. D. 5204. Mariguit-daguit Island, N.  $88^{\circ}$  E., 3.50 miles (lat.  $11^{\circ}04'18''$  N., long.  $125^{\circ}05'30''$  E.), off east coast of Leyte. In 15 fathoms. April 11, 1908. Length 124 to 443 mm. Largest example (1822) type, others paratypes.



4266. D. 5209. Taratara Island.  
(N.), S.  $53^{\circ}$  W., 1.80 miles (lat.  $11^{\circ}$   
 $45' 25''$  N., long.  $124^{\circ} 48' 05''$  E.),  
off western Samar. In 20 fathoms.  
April 14, 1908. Length 121 mm.

8848, 8849. D. 5461. Carrigo Island.  
(W.), N.  $12^{\circ}$  W., 4.9 miles (lat.  $13^{\circ} 57'$   
 $42''$  N., long.  $123^{\circ} 06' 42''$  E.), east  
coast of Luzon. In 11 fathoms.  
June 14, 1909. Length 230 to 235  
mm.



11-~~10~~-43

Pages 2389 through 2392 either  
misnumbered or missing

C. M. Wade



2393

Brachius macrolepis (Bleeker)

Synaptura macrolepis Bleeker, Act.  
Ned. Sci. Ind. Néerl. (Borneo), vol. 5,  
p. 7, 1858-59 (type locality:  
Sinkawang, Borneo). — Günther,  
Cat. Fishes Brit. Mus., vol. 4, p. 486,  
1862 (copied). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol.  
5, p. 171, 1929 (compiled), p. 430 (reference).  
Brachius macrolepis Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 20, pl.  
(5) 236, fig. 3, 1866-72 (Borneo). —  
Horman, Rec. Indian Mus., vol. 30,  
pt. 2, p. 181, pl. 4, July 1928 (Orissa).



2394

Brachirus muelleri (Steindachner)

Synaptura mülleri Steindachner, Denks.  
Akad. Wiss. Wien, Math.-nat. Kl., vol. 41,  
p. 4, 1879 (type locality: Cleveland Bay  
at Townsville, Queensland). —

Klunzinger, Sitzb. Ber. Akad. Wiss. Wien,  
Math.-nat. Kl., vol. 80, pt. 1, p. 408, 1879  
(1880) (Queensland). — Weber and  
Beaufort, Fishes Indo Austral. Archip.,  
vol. 5, p. 172, 1929 (compiled).

Synaptura muelleri McCulloch, Austral.  
Mus. Mem., no. 5, pt. 2, p. 285, Sep. 10,  
1929 (compiled).

Brachirus muelleri Horman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 295, <sup>June 15</sup> 1926.  
(Gloucester Head; Bowen; types of <sup>Synaptura</sup> ~~Brachirus~~  
arafurensis).

Synaptura arafurensis Günther, Rep.  
Voy. Challenger, vol. 1, pt. 5, p. 49, 1880  
(type locality: Arafura Sea, 35 fathoms).

Brachirus arafurensis Fowler, Mem.  
Bishop Mus., vol. 10, p. 95, 1928 (compiled).



Brachius orientalis (Schneider) <sup>2395</sup>

Pleuronectes orientalis Schneider, Syst.  
Ichth., p. 157, 1801 (type locality: Tranquebar).  
Brachius orientalis Swainson, Nat. Hist.  
Animals, vol. 2, p. 303, 1839 (reference).  
— Norman, Biol. Res. Endeavour, vol. 5,  
pt. 5, p. 293, <sup>June 15,</sup> 1926 (Australia, New South Wales,  
southern Queensland, Port Darwin);  
Record. Indian Mus., vol. 30, pt. 2, p. 179, <sup>fig. 3,</sup>  
July 1928 (Karachi, South Canara, Canara,  
Quilon, Trivandrum, Malabar, Madras,  
Emmur backwater, Chilka Lake, Cochin,  
Persian Gulf, Sind, Calicut, Ceylon,  
Malabar). — Chu, Biol. Bull. St.  
John's Univ. Shanghai, no. 1, p. 93, Jan.  
1931 (reference). — Chevey, Inst. Océan.  
Indo Chine, 19<sup>e</sup> note, p. 28, Aug. 25, 1932  
(Annam).

Euryglossa orientalis Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 99, 1858  
(Paris Museum).



Synaptura orientalis Günther, Cat.  
Fishes Brit. Mus., vol. 4, p. 484, 1862  
(compiled). — Day, Fishes of India, pt.  
3, p. 429, pl. 94, fig. 2, 1877 (Canara,  
Singapore); Fauna British India,  
Fishes, vol. 2, p. 449, 1889. — Jordan  
and Evermann, Proc. U. S. Nat. Mus.,  
vol. 25, p. 366, 1902 (Formosa). ✓ Seale,  
— Jenkins, Mem. Indian Mus., vol.  
3, p. 29, 1910 ( ).

Mem. Asiatic Soc. Bengal, vol. 6, pt. 9,  
p. 476, 1924 (Tale Sap, Peninsular  
Siam). — McCulloch, Mem. Austral.  
Mus., no. 5, pt. 2, p. 285, Sep. 10, 1929  
(compiled). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol. 5,  
p. 175, 1929 (Riouw). — Tirant, Serv.  
Océan. Pêch. Indo Chine, 6<sup>e</sup> note,  
p. 172, 1929 (Hué).



Synaptura orientalis Günther, Cat.  
 Fishes Brit. Mus., vol. 4, p. 484, 1862  
 (compiled). — Day, Fishes of India, pt.  
 3, p. 429, pl. 94, fig. 2, 1877 (Canara,  
 Singapore); Fauna British India,  
 Fishes, vol. 2, p. 449, 1889. — Jordan  
 and Evermann, Proc. U. S. Nat. Mus.,  
 vol. 25, p. 366, 1902 (Formosa). — Seale,  
 Philippine Journ. Sci., vol. 9, p. 78, 1914  
 (Hong Kong). — Hora, Mem. Indian  
 Mus., vol. 5, p. 759, 1923 (Chilka Lake);  
 Mem. Asiatic Soc. Bengal, vol. 6, pt. 9,  
 p. 476, 1924 (Talé Sap, Peninsular  
 Siam). — McCulloch, Mem. Austral.  
 Mus., no. 5, pt. 2, p. 285, Sep. 10, 1929  
 (compiled). — Weber and Beaufort,  
 Fishes Indo Austral. Archip., vol. 5,  
 p. 175, 1929 (Riouw). — Tirant, Serv.  
 Océan. Pêch. Indo Chine, 6<sup>e</sup> note,  
 p. 172, 1929 (Hué).



2397

Solea foliacea Richardson, Ichth.  
China Japan, p. 279, 1846 (type  
locality: coasts of China; Canton).

Synaptura foliacea Günther, Cat.  
Fishes Brit. Mus., vol. 4, p. 481, 1862  
(China). — Day, Fishes of Malabar, p.  
173, 1865. — Reeves, Journ. Pan Pac.  
Res. Inst., vol. 2, no. 3, p. 14, July-Sep.  
1927 (name).

Brachirus foliaceus Bleeker, Nederl.  
Tijds. Dierk., vol. 4, p. 130, 1873  
(1874) (reference).

Solea pan (not Buchanan-Hamilton)  
Bleeker, Natuurk. Tijds. Nederl. Indië,  
vol. 1, p. 410, 1850 (1851).

Synaptura pan Bleeker, Verh.  
Batavia. Genoot., no. 9, vol. 24, p. 30,  
1852 (Biliton). — Reeves, Journ. Pan  
Pac. Res. Inst., vol. 2, no. 3, p. 14,  
July-Sep. 1927 (Swatow).

? Solea trichodactylus <sup>(not Cuvier)</sup> Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 95, 1858  
(type locality: Amboina [Paris Collection]).



2398

Synaptura cinerascens Günther, Cat.  
Fishes Brit. Mus., vol. 4, p. 482,  
1862 (type locality: Ceylon). — Day,  
Fishes of India, pt. 3, pl. 93, fig. 4,  
1877.

Brachius sundaicus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 20, pl. (5)  
236, fig. 4, pl. (8) 239, fig. 2, 1866-72  
(type locality: Rio, Bintang; Singapore;  
Biliton).

Synaptura nigra Macleay, Proc. Linn.  
Soc. New South Wales, vol. 5, pt. 1, p. 49,  
Aug. 1880 (type locality: Cook's River,  
Botany Bay); vol. 6, 1882, p. 137.

— Woods, Fish. Fisher. New South Wales,  
p. 77, 1882. — Ogilby, Cat. Fish. New  
South Wales, p. 33, 1887. — Saville Kent,  
Proc. Roy. Soc. Queensland, vol. 6, 1889,  
p. 240. — Ogilby, Edible Fish. New South  
Wales, p. 160, pl. 39, 1893. — Waite, Mem.  
Austral. Mus., vol. 6, p. 125, pl. 30, 1899.

— Stead, Fishes of Australia, p. 181, pl.



6, 1906; Edible Fish. New South  
Wales, p. 106, pl. 73, 1908. — Ogilby,  
Proc. Roy. Soc. Queensland, vol.  
21, p. 25, 1908. — Roughley, Fishes  
of Australia, p. 172, pl. 59, 1916.  
— McCulloch, Austral. Zoologist,  
vol. 2, p. 46, 1921.

Synaptura cinerea de Vis, Proc. Linn.  
Soc. New South Wales, vol. 8, pt. 2, p.  
288, July 17, 1883 (type locality:  
Moreton Bay, Queensland).



Depth  $1\frac{2}{3}$  to  $2\frac{1}{8}$ ; head 3 to  $3\frac{4}{5}$ , ~~snout~~  
width  $1\frac{3}{5}$  to  $1\frac{2}{3}$ ; snout  $2\frac{3}{5}$  to 3; eye  
3 to  $4\frac{1}{2}$ , 1 to  $1\frac{1}{8}$  in snout, 1 to  $1\frac{1}{3}$  in  
interorbital; maxillary half way to  $\frac{4}{5}$  in  
snout; 3 to ~~3~~  $3\frac{3}{5}$  in head; interorbital  $3\frac{1}{4}$   
to  $3\frac{7}{8}$ , broadly convex; upper edge of  
preopercle spine  $2\frac{1}{8}$  to  $5\frac{1}{4}$ . Gill rakers  
5 + 13, short strong points, 4 of gill  
filaments which about equal eye.

Scales 50 to 57 in lateral line, tubes  
large but not well marked; 7 scales  
above lateral line, 22 below. Scales  
with 6 or 7 basal striae, mostly marginal;  
apical denticles 83 to 88, each with long  
blender rootlet, variably 2 denticles  
fusing to single rootlet; circuli fine.

D. XIII or XIV, 18, I to 20, I, last  
spine  $1\frac{1}{4}$  to  $1\frac{3}{4}$  in head, eleventh  
ray  $3\frac{2}{3}$  to 4; A. III, 18, I or 19, I, last  
spine in combined head and body  
 $1\frac{1}{3}$  to  $2\frac{1}{5}$  in head, tenth ray  $3\frac{3}{4}$  to 4.  
least depth of caudal peduncle 2 to  $2\frac{1}{8}$   
in combined head and body; in head; caudal  
1 to  $1\frac{1}{6}$ , convex behind; pectoral 1 to  $1\frac{1}{5}$ ;  
ventral  $3\frac{1}{4}$  to  $3\frac{2}{3}$  in combined head  
and body.

General color pale brown, with yellowish  
shade. nine transverse blue-gray bands,  
that usually fading out to general pale  
body color, also each inclined little  
posteriorly and broadly bordered with  
deep or dusky-brown; extend on spinous  
dorsal and over most of both snouts as



2400

Brachirus pan (Buckanan-Hamilton)

Pleuronectes pan Buchanan-Hamilton,  
Fishes of Ganges, pp. 130, 373, pl. 24,  
fig. 42, 1822 (type locality: eastern  
Gangetic estuaries from Bhakra downwards).

Brachirus pan Swainson, Nat. Hist.  
Animals, vol. 2, p. 303, 1839 (reference).  
— Bleeker, Atlas Ichth. Ind. Néerl.,  
vol. 6, p. 21, pl. (9) 240, fig. 1; 1866-72  
(Bintang, Singapore, Biliton); Nederl.  
Tijds. Dierk., vol. 4, p. 130, 1873 (1874)  
(name). — Chu, Biol. Bull. St. John's  
Univ., Shanghai, no. 1, p. 94, Jan. 1931  
(reference). — Horman, Mem. Indian  
Mus., vol. 30, pt. 2, p. 181, July 1928  
(Calcutta, River Hughli, Santipur  
marshes, Sundarbans, Hittang River).

Synaptura pan Bleeker, Verh. Batavia.  
Genoot., no. 9, vol. 24, p. 30, 1852 (Biliton).  
— Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 481, 1862 (India). — Day,  
Fishes of India, pt. 3, p. 429, pl. 93, fig.



2401  
3, 1877 (Calcutta); Fauna British India,  
Fishes, vol. 2, p. 449, 1889. — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 171, 1929 (Bleeker's  
specimen).

— Sauvage, Bull. Soc. Philomath. Paris,  
ser. 7, vol. 5, p. 104<sup>7</sup>, 1881 (Swatow).

Pleuronectes canus Gray, Cat. Fish Gronow,  
p. 91, 1854 (type locality: Mari Indico).



2402

Brachirus panoides (Bleeker)

Synaptura panoides Bleeker, Natuurk.  
Tijds. Nederl. Indië, vol. 2, 1851, p.  
440 (type locality: Bandjermassing,  
Borneo); Verh. Batavia. Genoot.,  
no. 9, vol. 24, p. 30, 1852 (Bandjermassing).  
— Kaup, Archiv naturges., vol. 24, P  
pt. 1, p. 97, 1858 (reference). —  
Günther, Cat. Fishes Brit. Mus., vol.  
4, p. 486, 1862 (Singapore?). — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 174, 1929 (Sumatra).

Brachirus panoides Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 21, pl. (8)  
239, fig. 3, 1866-72 (Singapore,  
Sumatra, Borneo).



Brachirus pectoralis (Kaup) <sup>2403</sup>

Synaptura pectoralis Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 96, 1858 (type  
locality: Cape of Good Hope). —  
Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 483, 1862 (compiled).



2404

Brachirus salinarum Ogilby

Brachirus salinarum Ogilby, Proc.  
Roy. Soc. Queensland, vol. 23, p. 35,  
1910 (type locality: Salt pans at  
Kimberly, North Queensland). — Horman,  
Biol. Res. Endeavour, vol. 5, pt. 5, p. 294, June 15, 1926 (compiled).  
Synaptura salinarum McCulloch,  
Austral. Mus. Mem., no. 5, pt. 2, p.  
285, Sep. 10, 1929 (reference).

(Mem. Queensland Mus., vol. 5, p. 64,  
figs. 2-3, 1916 (types)).



Brachius selheimi (Macleay)<sup>2405</sup>

Synaptura selheimi Macleay, Proc.  
Linn. Soc. New South Wales, Vol. 7, pt.  
1, p. 71, May 23, 1882 (type locality:  
Palmer River, Queensland). —

McCulloch, Austral. Mus. Mem., no. 5,  
pt. 2, p. 286, Sep. 10, 1929 (reference).

Brachius selheimi Norman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 294, June 15,  
1926 (reference).



Brachirus setifer (Paradise) 2406

Synaptura setifer Paradise, Mem.  
Queensland Mus., vol. 11, pt. 1, p. 101,  
fig. 3, April 28, 1927 (type locality:  
Port Darwin, Northern Territory). —  
McCulloch, Austral. Mus. Mem.,  
No. 5, pt. 2, p. 286, Sep. 10, 1929 (reference).



Brachirus villosus (Weber)<sup>2407</sup>

Synaptura villosa Weber, Nova  
Guinea, vol. 5, pt. 2, p. 251, pl. 13,  
fig. 3, 1908 (type locality: Woyani  
River in Irama basin, south New  
Guinea); vol. 9, pt. 4, p. 590 (Verlaten  
Bocht, Alkmaar, Merauke, Sabang,  
Lorentz River, Regen Island). —  
Regan, Trans. Zool. Soc. London,  
vol. 20, pt. 6, p. 276, 1914 (Mimika  
River, New Guinea). — Weber and  
Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 176, fig. 47, 1929  
(Woyani, Lorentz River, Merauke).

Brachirus villosus Fowler, Mem.  
Bishop Mus., vol. 28, p. 95, 1928 (reference).



2408

Genus Soleichthys Bleeker

Soleichthys Bleeker, Act. Soc. Sci.  
Ind. Néerl., vol. 6, p. 183, 1859.  
(Type Solea heterorhina Bleeker,  
monotypic.)

Front nasal tube of ocular side  
elongate. Gill opening of ocular  
side ends opposite upper part of  
pectoral base. Opercular membrane  
joined to upper part of pectoral  
fin. Only posterior parts of dorsal  
and anal fins scaly on blind side.  
Hind dorsal and anal rays  
connected only with base of caudal  
fin, rather long. Pectoral  
fins small.



733

Holacanthus monophthalmus Kner,  
Sitzs. Abad. Wiss. Wien, band 56, 1867,  
p. 714. Islands of South Sea or west coast  
of South America. [Raiatea, Society Islands.]

Holacanthus ocularis Peters, Monatsb.  
Abad. Wiss. Berlin, 1868, p. 147. South Seas.

Holacanthus sphyra de Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, 1884 (1885), p.  
457. Queensland coast.

Yellow in life with narrow dusky  
border around eye. Blue bar along  
opercle edge. Pale brown bar across  
chin. Soft vertical fins with white  
edges and dusky submarginal line.

Melanesia, Micronesia, Polynesia,  
Hawaii.

52472 U.S.N.M. Samoa. Bureau of  
Fisheries. 5 examples.



2409

Soleichthys heterorhinos (Bleeker)

Solea heterorhinos Bleeker, Act.  
Soc. Sci. Ind. Néerl. (Amboin.),  
vol. 1, p. 64, 1856 (type locality:  
Amboina).

Solea heterorhina Günther, Cat.  
Fishes Brit. Mus., vol. 4, p. 466, 1862  
(no locality). — Kner, Denks. Akad.  
Wiss. Wien, math.-nat. Kl., vol. 24,  
p. 8, pl. 3, fig. 2, 1865 (

— Bleeker, Atlas Ichth. Ind. Néerl.,  
vol. 6, pl. (9) 240, fig. 2, 1866-72.

— Day, Fishes of India, pt. 3,  
p. 426, pl. 92, fig. 5, 1877 (Port  
Blair). — Günther, Rep. Voy.

Challenger, vol. 1, pt. 6, p. 36, 1880  
(Ovalau, Fiji). — Day, Fauna

British India, Fishes, vol. 2, p.  
444, fig. 159, 1889. — Günther,

Journ. Mus. Godeffroy, vol. 8, pt.  
16, p. 345, 1909 (Ponape, New Britain,

Saville-Kent, Great Barrier Reef, p. 297, pl. 16, fig. 5,  
1893 (Thursday Island).



Samoa, Tonga, Fiji). — Weber,  
Siboga Exped., vol. 57, p. 435, 1913  
 (Elat and Feer, High Kei). —  
Weber and Beaufort, Fishes  
 Indo Austral. Archip., vol. 5, p.  
 148, fig. 38, 1929 (Weber's material).  
Solea heterorhinus Bleeker, Atlas  
 Ichth. Ind. Néerl., vol. 6, p. 17, 1866-  
 72 (Celebes, Ambona, Timor).  
Soleichthys heterorhinus Bleeker,  
 Act. Soc. Sci. Ind. Néerl. (Amboina),  
 vol. 8, p. 14, 1860 (Amboina).  
 — Evermann and Seale, Bull.  
 Bur. Fisher., vol. 26, p. 107, 1906  
 (1907) (Bacon). — McCulloch,  
 Mem. Queensland Mus., vol. 5,  
 p. 60, 1916 (type of Solea lineata, India).  
 — Norman, Biol. Res. Endeavour,  
 vol. 5, <sup>pt. 5,</sup> p. 286, <sup>June 15</sup> 1926 (compiled).



2411

— Fowler, Mem. Bishop Mus., vol.  
10, p. 94 (compiled). — McCulloch,  
~~Proc. Roy. Soc. Victoria, vol. 5, p. 40~~  
Mem. Austral. Mus., no. 5, pt. 2,  
p. 283, Sep. 10, 1929 (reference).

? Aesopia multifasciata Kaup,  
Archiv Naturg., vol. 24, pt. 1, p.  
97, 1858 (type locality: India;  
through Le Sneur).

Synaptura multifasciata Günther,  
Cat. Fishes Brit. Mus., vol. 4, p.  
485, 1862 (compiled; said to be from East Indies).

— Day, Fishes of India, pt. 3, p.  
430, 1877. Fauna British India,  
~~vol. 2, p. 450~~, 1889. and Kner

Solea nigrostruolata Steindachner,  
Sitzs. Ber. Akad. Wiss. Wien, math.-  
nat. Kl., vol. 61, p. 427, pl. 1, fig. 2,  
1870 (type locality: Viti Levu).

Solea lineata Ramsay, Proc. Linn.  
Soc. New South Wales, vol. 7, pt. 4,  
p. 406, April 1883 (type locality:  
Port Stephens, New South Wales).



2412

Soleichthys lineatus McCulloch,  
Austral. Mus. Mem., No. 5, pt. 2,  
p. 283, Sep. 10, 1929 (reference).



Depth  $2\frac{4}{5}$  to  $2\frac{7}{8}$ ; head  $5\frac{1}{2}$  to  $5\frac{2}{3}$ , width  $2\frac{1}{4}$  to 3. Snout end to lower orbit  $3\frac{4}{5}$  to 4 in head; lower orbit  $4\frac{4}{5}$  to  $5\frac{1}{4}$ ,  $1\frac{1}{8}$  to  $1\frac{1}{4}$  in snout, opposite to  $\frac{1}{5}$  in advance of upper orbit; mouth cleft reaches  $\frac{1}{4}$  to  $\frac{1}{3}$  in lower orbit, <sup>nasal tentacles  $1\frac{1}{4}$  times lower orbit;</sup> length 3 to  $3\frac{1}{5}$  in head; <sup>scaly</sup> interorbital  $2\frac{1}{2}$  to 3 in lower orbit. Gill rakers as few very minute rudimentary papillae; gill filaments long as lower orbit.

Scales 88 to 90 in lateral line from above gill opening to caudal base and 7 or 8 more on latter (7 more forward on head to dorsal intersection); 22 or 23 above, 35 to 37 below. Scales all cycloctenoid. Scales with 5 basal



(60i)

A 545. Sulade Island. September 17,  
1909. Length 377 mm.

5724, 5725. Suragao, Mindanao.  
May 8, 1908. Length 297 to 340 mm.

7843. Taganak Island, Jolo Sea.  
January 7, 1909. Length 273 mm.

7356, 9518. Tara Island. December 15,  
1908. Length 133 to 275 mm.

4910. Tataan, Samaluc Island.  
February 19, 1908. Length 280 mm.

4920. Tataan. February 20, 1908.  
Length 254 mm.

5820. Tataidaga Point. May 15, 1908.  
Length 244 mm.

6427, 6467. Tilig, Lubang. July 14, 1908.  
Length 300 to 310 mm.

7654. Ulugan Bay, Oyster Inlet.  
December 28, 1908. Length 276 mm.

6667, 20829. Varadero Bay, Mindoro.  
July 23, 1908. Length 164 to 220 mm.



2414

radiating striae; 11 or 12 rather long slender pointed apical denticles; cirruli fine continuous.

D. 88 to 90, fin height  $1\frac{2}{3}$  to 2 in head; A. 75 or 76, fin height  $1\frac{3}{5}$  to  $1\frac{2}{3}$ ; caudal  $1\frac{1}{4}$ , rounded behind; ventral  $2\frac{1}{4}$  to  $2\frac{4}{5}$ . (pectoral  $2\frac{1}{8}$  to  $2\frac{1}{6}$ ;

or right side

Ecum drab generally, with many variable transverse close set darker to drab bands, often as pairs, and all with <sup>still</sup> darker narrow ~~bordering~~ bordering lines. Often transverse dark bands more widened and broken or irregular towards caudal and all extending on vertical fins. Vertical fins all darker subterminally, with narrow whitish edge. Orbitals grays. Left side whitish, vertical



8139. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909. Length 290 mm.

13505, 16007, 16011, 17702 to 17704, 19270.

Alimango Bay, Burias Island. March 5, 1909. Length 123 to 210 mm.

6501. Balikias Bay, Luzon. July 17, 1908. Length 262 mm.

A504. Balukbaluk Island, south of Zamboanga. September 12, 1909. Length 305 mm.

18921. Batane Island. June 5, 1909. Length 132 mm.

8668. Biri Channel, June 22, 1909. Length 313 mm.

7445, 7446, 10587 to 10589, 19774. Bolalo Bay, Malampaya Sound, Palawan Island. December 21, 1908. Length 47 to 289 mm.

12216. Bugsuk Island, Bilabac. January 5, 1909. Length 154 mm.

5599, 5600, 5631, 5676, 15994. Busin Harbor, Burias Island. April 22, 1908. Length 154 to 508 mm.



2415

fins pale basally, subterminally  
blackish brown, edges whitish.

Andamans, East Indies,  
Philippines, Queensland, New South  
Wales, Melanesia, Micronesia,

11567. Cebu market, Cebu.  
August 26, 1909. Length 82 mm.

15510. Dumaca River, Luzon.  
February 25, 1909. Length 105 mm.



first anal ray is longer than the soft anal base.

A few of my specimens differ in their dark coloration, nearly or largely uniform chocolate brown, except some pale spots on each side of the abdomen posteriorly. The coloration is quite variable in alcoholic specimens. Usually there is a dark to blackish blotch, sometimes a little smaller than the eye or again even larger than the eye. Its position is variable, for it may be rather close behind the gill opening or about first third of pectoral, over middle of pectoral or over hind part of pectoral. One, 2 or even 3 dark blotches may occur. Some specimens show vertical transverse dark bars and these 5 to 10.



2416

Soleichthys microcephalus (Günther)

Solea microcephala Günther, Cat.

Fishes Brit. Mus., vol. 4, p. 466,  
1862 (type locality: Australia,  
New South Wales). — Kner, Reise

~~Soleichthys microcephalus Macleay~~

~~Cutlock, Austral. Mus. Mem., no.~~

~~5, pt. 2, p. 283, Sep. 10, 1929 (reference).~~

Novara, Fische, p. 288, 1865 (

— Macleay, Proc. Linn. Soc. New  
South Wales, vol. 6, 1882, p. 135

— Ogilby, Cat. Fishes New South  
Wales, p. 32, 1887. — Waite, Mem.

New South Wales Nat. Club, no. 2,  
p. 44, 1904. — Stead, Edible Fishes

of New South Wales, p. 105, pl. 71, 1908.

— Roughley, Fishes of Australia,  
p. 176, pl. 61, 1916. ~~no more~~



2417

Solichthys microcephalus  
McCulloch, Austral. Zool., vol.  
2, p. 47, pl. 13, 1921 (New South  
Wales). — Norman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 287,  
June 15, 1926 (compiled). — McC  
Culloch, Austral. Mus. Mem., No. 5,  
pt. 2, p. 283, Sep. 10, 1929 (reference).



longitudinal bluish lines, <sup>also</sup> becoming broader and vertical posteriorly on snout. Iris brown. Hind border of preopercle and opercle, gill openings, also ~~most~~ of preopercular spine bluish. Two parallel bluish lines, variously complete, down from occiput, front one to front border of eye and hind one to hind border of eye; narrow blue line from front of inter-orbital medially forward toward front of snout; all frontal lines bordered narrowly with dusky. Paired fins and caudal all pale or yellowish-brown, outer terminal portion of ventral with blue margin line and dusky submarginal line.

Red Sea, Zanzibar, Mauritius, East Indies, <sup>Melanesia, Micronesia,</sup> Polynesia. The color-pattern variable with age. Small examples show but 8 transverse bluish bands, with seventh forming blackish ocellus on soft dorsal, blue borders curving and breaking for its inception. If the very young I think and tail with but 4 transverse pale bands, intervening areas with only faint indication of dark band; head with 3 narrow transverse pale bands; large black ocellus on soft dorsal larger than eye.



Genus Zebrias Jordan and Snyder

Zebrias Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, p. 380, 1900.

(Type Solea zebrina Schlegel, monotypic.)

Opercular membrane joined to upper portion of pectoral. Gill opening on ocular side ending opposite upper part of pectoral base. Front nasal tube of ocular side short or moderate. <sup>Scales ctenoid.</sup> Dorsal and anal entirely scaly on blind side. Hind ray of dorsal and anal connected with at least basal third of caudal. First dorsal ray not enlarged.



Zebrias altipinnis (Alcock)

2419

Synaptura altipinnis Alcock, Ann.  
Mag. Nat. Hist., ser. 6, vol. 6, p. 441, 1890  
(type locality: off Vizagapatam coast,  
in 25 fathoms), Journ. Asiatic Soc.  
Bengal, vol. 65, p. 329, 1896 ( );  
Illustrat. Zool. Investigator, pt. 5, pl. 24,  
fig. 1, 1898. — Jenkins, Mem. Indian  
Mus., vol. 3, No. 1, p. 29, 1910. — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 178, 1929 (Java Sea;  
Madura), p. 430 (reference).  
Zebrias altipinnis Norman, Rec. Indian  
Mus., vol. 30, pt. 2, p. 184, pl. 7, July 1928  
(Orissa, Ganjam, Hugli River mouth,  
Bengal Bay, Tenasserim, Arabian coast).



Zebrias dicholepis (Peters)

2420

Synaptura dicholepis Peters, Monatsb.  
Akad. Wiss. Berlin, p. 844, 1876 (1877)  
(type locality: New Hanover, Bismarck  
Archipelago).

Zebrias dicholepis Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, p. 413,  
1905 (1906) (name).

Brachius dicholepis Fowler, Mem.

Bishop Mus., vol. 10, p. 95, 1928 (compiled).



Zebrias jereus (Cuvier)

2421

Pleuronectes jereus Cuvier, Règne Animal, vol. 2, p. 343, 1829 (on Jeree potoo B. Russell, Fishes of Coromandel, vol. 1, p. 56, pl. 71, 1803; type locality: Vizagapatam).

Brachius jereus Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (reference).

Synaptura jereus Bleeker, Verh. Batavia. Genoot. (Bengal. Hind.), vol. 25, p. 76, 1853 (reference). — Jerdon, Madras Journ. Liter. Sci., vol. , p. 148, 1854.

Synaptura quagga (not Kaup) Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (part).

Synaptura synapturoides Jenkins, Mem. Indian Mus., vol. 3, p. 28, pl. 3, fig. 4, 1910.



2422

Zebrias synapturoides Horman, Rec.  
Indian Mus., vol. 30, pt. 2, p. 83, pl.  
5, July 1928 (Ganjam, Malabar, 24 to  
68 fathoms).



2423

Zebrias quagga (Kaup)

Aesopia quagga Kaup, Archiv naturg.,  
vol. 24, pt. 1, p. 98, 1858 (type locality:  
Bombay). — McCulloch, Austral. Mus.  
Mem., No. 5, pt. 2, p. 287, Sep. 10, 1929  
(reference).

Synaptura quagga Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 485, 1862 (China);  
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p. , 1874 (Chefoo). — Macleay, Proc.  
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1, p. 136, 1881 (Sydney, Brisbane, Swan  
River). — ? Hystrom, Bih. Svensk. Vet.  
Akad. Handl. Stockholm, vol. 13, aft.  
4, no. 4, p. 41, 1887 (Nagasaki, Japan).  
— Alcock, Ann. Mag. Nat. Hist., ser.  
6, vol. 6, p. 440, 1890 ( );  
Journ. Asiatic Soc. Bengal, vol. 58, pt.  
1, no. 3, p. 286, 1889 (Bengal Bay);  
vol. 65, pt. 2, 329, 1896 ( ).  
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Austral Archip., vol. 5, p. 173, 1929  
(Java Sea; Madura).



Brachirus quagga Bleeker, Nederl.  
Tijds. Dierk., vol. 4, p. 130, 1873  
(1874) (reference).

Zebrias quagga Jordan and Snyder,  
Annot. Zool. Japon., vol. 3, p. 123,  
1901 (reference). — Hubbs, Proc. U.  
S. Nat. Mus., vol. 48, p. 493, 1915  
(Hong Kong specimen). — Reeves, Journ.  
Pan Pac. Res. Inst., vol. 2, no. 3, p.  
14, July-Sep. 1927 (Hingpo; Hong  
Kong). — Horman, Records Indian  
Mus., vol. 30, pt. 2, p. 184, pl. 6, July  
1928 (Madras, Orissa, Persian  
Gulf, Bombay, 7 to 10 fathoms). —  
Chu, Biol. Bull. St. John's Univ.  
Shanghai, no. 1, p. 93, Jan. 1931  
(Chingwangtao).

Synaptura zebra (not Bloch) Day,  
Fishes of India, pt. 3, p. 430, pl. 94, fig.  
3, 1877 (part). — Regan, Journ.  
Bombay Nat. Hist. Soc., vol. 16, p. 330, 1905  
(Persian Gulf). — Jordan and Seale,  
Proc. Davenport Acad. Sci., vol. 10, p. 17, pl. 12,  
1905 (1907) (Hong Kong).



Zebrias zebra (Bloch)

Pleuronectes zebra Bloch, Naturges.  
Austral. Fische, vol. 3, p. 27, pl. 187,  
 1787 (type locality: East Indies). —  
Bonnaterre, Tabl. Ichth., p. 76, pl.  
 90, fig. 375, 1788 (East Indies). —  
Gmelin, Syst. Nat. Linn., pt. 1, p.  
 1226, 1789 (India). — Walbaum, Arted.  
Pisc., vol. 3, p. 114, 1792 (on Bloch). —  
Forster, Fauna Indica, p. 14, 1795. —  
Schneider, Syst. Ichth. Bloch, 1801, p.  
 151 (Tranquebar). — Lacépède, Hist.  
Nat. Poiss., vol. 4, p. 597, 642, 1802  
 (East Indies). — Shaw, General Zool.,  
 vol. 4, p. 305, pl. 44, 18 ( ).  
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Miscell., vol. 21, p. 890, 1809 (Indian  
 Seas). — Bennett, Life of Raffles, p.  
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Solea zebra Cuvier, Règne Animal,  
 vol. 2, p. 223, 1817 ( ).

— Bleeker, Verh. Batavia. Genoot.,  
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Rutter, Proc. Acad. Nat. Sci. Philadelphia,



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Archiv Zool. vol. 16, no. 2, p.  
, 1924 (Swatow).

Brachius zebra Swainson, Nat. Hist.  
Animals, vol. 2, p. 303, 1839 (on Bloch).  
— Bleeker, Atlas Ichth. Ind. Néerl.,  
vol. 6, p. 22, pl. (9) 240, fig. 3, 1866-  
72 (Java, Singapore, Pinang, Sumatra,  
Borneo); Néderl. Tijds. Dierk., vol. 4,  
p. 130, 1873 (1874) (Canton; Amoy);  
Verh. Lebad. Wet. Amsterdam  
(Pois. Jap.), vol. 18, p. 22, 1879  
(Nagasaki, Shimoda). — Fowler,  
Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled).  
Synaptura zebra Cantor, Journ.  
Asiatic Soc. Bengal, vol. 18, pt. 1,  
p. 1206, 1849 (1850) (Sea of Malay  
Peninsula and islands). — Günther,  
Cat. Fishes Brit. Mus., vol. 4, p. 484,  
1862 (Amoy, China, East Indies, Pinang).  
— Kner, Reise Novara, Fische, p. 292,  
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of India, pt. 3, p. 430, pl. 94, fig. 3,  
1877 (type). — Günther, Rep. Voy.



Challenger, vol. 1, pt. 6, p. 49, 1880  
 (Arafura Sea, 35 to 49 fathoms).  
 — Namiye, Class. Cat., p. 111, 1881  
 (Tokyo). — Day, Fauna British India,  
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 Journ. Fisher. Bur. Tokyo, p. 8,  
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Matsunura, Prelim. Cat. (Mus. Fishes)  
 Tokyo, p. 24, 1897. — Vols, Revue  
 Suisse Zool., vol. 12, p. 462, 1904  
 ( ). — Weber and Beaufort,  
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Aesopia zebra Kaup, Archiv Naturges.,  
 vol. 24, pt. 1, p. 98, 1858 (reference). —  
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 vol. 3, p. 611, 1912 (Batavia).

Zebrias zebra Jordan and Snyder,  
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 Mus., vol. 48, p. 493, 1915 (Swatow, China).



— Reeves, Journ. Pan Pac. Res. Inst.,  
vol. 2, no. 3, p. 14, July-Sep. 1927  
(Chefoo, Chinwangtao, Swatow). —  
Chu, Biol. Bull. St. John's Univ.  
Shanghai, no. 1, p. 93, Jan. 1931  
(reference).

Nolea zebrina Schlegel, Fauna Japonica,  
Pois., pts. 10-14, p. 185, pl. 95, fig. 1,  
1846 (type locality: Japan).

Zebrias zebrinus Jordan and Snyder,  
Annot. Zool. Jap., vol. 3, p. 123, 1901.  
(reference); Proc. U. S. Nat. Mus., vol. 23,  
p. 900, 1901 (Nagasaki). — Jordan and  
Starks, Proc. U. S. Nat. Mus., vol. 31,  
p. 232, fig. 26, 1906 (Nagasaki, Tokyo, Kobe,  
Hakata).

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Journ. College Sci., vol. 33, p. 334, fig.  
284, 1913 (reference). — Snyder, Proc.  
U. S. Nat. Mus., vol. 42, p. 440, 1912 (Tokyo,  
Misaki, Kagoshima). — Hubbs, Proc.  
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Matsuura, Cat. Zool. Spect. Mus. Tokyo,



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Evermann and Shaw, Proc. Cal. Acad.  
Sci., vol. 16, No. 4, p. 112, Jan. <sup>31,</sup> 1927  
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Res. Inst., vol. 2, No. 3, p. 14, July-Sep.  
1927 (Shantung; Canton). — McCulloch,  
Austral Mus. Mem., No. 5, pt. 2, p.  
287, Sep. 10, 1929 (compiled). — Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
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Contrib. Biol. Lab. Sci. Soc. China,  
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— Chu, Biol. Bull. St. John's Univ.,  
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Compt. Rend. Sci. U. R. S. S., 1931, p. 318  
(Fusan, Korea).

Solea ornatus Richardson, Fishes  
China Japan, p. 279, 1846 (type locality:  
coasts of China; Canton; Borneo).



2430

Aesopia ommatura Kaup, Archiv Naturges., vol. 24, pt. 1, p. 98, 1858 (reference).

Synaptura ommatura Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 56, 1903.

Pleuronectes fasciatus Gray, Cat. Fish Gronow, p. 91, 1854 (type locality: India Orientali).

Solea fasciata Basilewsky, nouv. mem. Soc. Nat. Moscou, vol. 10, p. 261, 1855 (Shantung).

Zebrias fasciatus Jordan and Metz, Mem. Carnegie Mus., vol. 6, no. 1, pl. 9, fig. 2, 1913 (Fusan, Corea). — Slowerby, Natural. Manchuria, vol. 4, p. 183, 1930 (Pei Hai Ho).

Aesopia helotes Kaup, Archiv Naturges., vol. 24, pt. 1, p. 99, 1858 (on Jerrae photo B. Russell, Fishes of Coromandel,



vol. 1, p. 56, pl. 71, 1803; type locality: <sup>2431</sup> Vizagapatam).

Aesopia japonica Bleeker, Act. Soc. Sci. Ind. Néerl. (Jap.), vol. 8, p. 71, 1860 (type locality: Nagasaki).

Synaptura japonica Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (compiled).

Zebrias japonicus Jordan and Snyder, Annotat. Zool. Japon., vol. 3, p. 123, 1901 (Nagasaki). — Jordan and Starbuck, Proc. U. S. Nat. Mus., vol. 31, p. 234, 1906 (Tokyo; Wakanoura). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 440, 1912 (Hakodate), p. 517 (Okinawa). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 355, 1913 (reference). — Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 115, 1920 (Takamatsu). — Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., 1931, p. 128 (Nagasaki); Comptes Rend. Acad. Sci. U. R. S. S., 1931, p. 318 (Fusan, Korea).



<sup>2432</sup>  
Synaptura quagga (not Kaup) Rutter,  
Proc. Acad. Nat. Sci. Philadelphia,  
1897, p. 90 (Swatow).

Synaptura smithi Regan, Ann. Mag.  
Nat. Hist., ser. 7, vol. 11, p. 57, pl. 16,  
fig. 1, 1903 (type locality: Inland Sea  
of Japan).



Depth  $2\frac{7}{8}$  to 3; head  $5\frac{3}{5}$  to 6, width  $2\frac{4}{5}$  to 3. Snout end to lower orbit 4 to  $4\frac{1}{5}$  in head; lower orbit 5 to  $5\frac{1}{5}$ ,  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in snout; orbits opposite or upper  $\frac{1}{5}$  in advance; maxillary reaches  $\frac{2}{5}$  to  $\frac{1}{2}$  in lower orbit; length to snout tip 3 in head; nasal tube short, less than pupil; scaly interorbital  $1\frac{1}{2}$  in lower orbit, concave. Gill rakers 6 or 7 short feeble rudiments; gill filaments equal lower orbit.

Scales 102 to 108 in lateral line from above gill opening to caudal base and 8 to 10 more on latter (10 more forward to dorsal intersection); 26 or 27 above, 41 to 43 below. Scales all



Cuv<sup>129</sup>Lethrinus amboinensis BleekerLethrinus amboinensis Bleeker, Natuurk.

Tijdschr. Nederl. Indië, vol. 6, 1854, p. 490.

Amboina.  $\frac{1}{m}$  Günther, Cat. Fishes British Mus.,vol. 1, 1859, p. 455 (Amboina).  $\frac{1}{m}$  Kner,

Reise Novara, Fische, 1865, p. 80 (Niobars).

 $\frac{1}{m}$  Günther, Journ. Mus. Godeffroy, vol. 2-3,pts. 5-6, 1874, p. 63 (Peleu Islands).  $\frac{1}{m}$ Martens, Preuss. Exped. Ost Asien, 1876, p.387 (Ternate).  $\frac{1}{m}$  Bleeker, Atlas Ichth.

Ind. Néerland., vol. 7, 1873-76, pl. (33) 311,

fig. 3; vol. 8, 1876-77, p. 116 (Amboina, Flores,

Ceram).  $\frac{1}{m}$  Schmeltz, Cat. Mus. Godeffroy, no. 8, 1881, p. 5 (East Indies). $\frac{1}{m}$  Jordan and Seale, Bull. Bur.

Fishes., vol. 26, 1906 (1907), p. 24 (Cavite).

 $\frac{1}{m}$  Jordan and Richardson, Mem. Carnegie

Mus., vol. 4, no. 4, 1909, p. 189 (Takao, Formosa).

 $\frac{1}{m}$  Seale, Philippine Journ. Sci., vol. 5, no. 4, Dec. 1910, p. 277 (Sandakan). $\frac{1}{m}$  Snyder, Proc. U. S. Nat. Mus., vol. 4, 1912,p. 500 (Okinawa).  $\frac{1}{m}$  Weber, Siboga Exped.,

vol. 57, Fische, p. 288 (Malakia, Nusa

Laut).  $\frac{1}{m}$  Oshima, Jap. Journ. Zool. Trans.



ctenoid. Scales with 4 or 5 basal radiating striae; 7 or 8 long slender and somewhat divergent apical denticles; circuli fine, continuous. Lateral line on both sides.

D. 80 to 82, fin height  $1\frac{3}{5}$  to  $1\frac{2}{3}$  in head; A. 66 or 67, fin height  $1\frac{7}{8}$  to 2; caudal 1, rounded behind; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral  $2\frac{1}{3}$  to  $2\frac{2}{5}$ .

Right side cream buff to vinaceous buff, with 11 pairs of darker brown transverse bands, pairs variable in width, pale interspaces never quite so wide as dark bands and narrow separating pale line dividing bands of each pair. White ringed blackish brown ocellus on caudal base. All fins bands all bent posteriorly.



4 examples. A. N. S. P. Calapan, Mindoro.  
Rev. Joseph Clemens. Length 130 to 147  
mm.?



Orbits gray. Left side whitish<sup>2435</sup>,  
vertical fins all dark, especially  
terminally, cross bands obscurely  
showing through. Right pectoral  
blackish, left greatly shorter  
and whitish.

India, Malaya, East Indies,  
China, Formosa, Riu Kiu, Korea,  
Japan.

13738. Kowloon, China, September  
24, 1908. Length 105 mm.



22745. (Generale Island,  
Capunuyugan Point, East coast  
Mindanao. May 9, 1908. Length 89 mm.

20272. Cattingan Bay, Masbate.  
April 18, 1908. Length 72 to 98 mm.  
3 examples.

10711 to 10713: Cattingan Bay,  
Dumucung Point, Masbate. April 19, 1908.  
Length 59 to 107 mm. 12 examples.

22132 [1905] to 22134. Cebu market.  
September 4, 1909. Length 93 to 105 mm.  
15 examples. Surigao, Mindanao.

May 8, 1908. Length 34 to 88 mm.

59747 U.S.N.M. Yatsuki, Japan.  
Dr. H. M. Smith. Length 100 mm. As  
Lethrinus richardsonii.

75504 U.S.N.M. Wakaboura.  
Jordan and Snyder. Bureau of  
Fisheries (200201). Length 190 to 194 mm.  
2 examples.



Genus Aesopia Kaup

2436

Aesopia Kaup, Archiv Naturges.,  
vol. 24, pt. 1, p. 97, 1858. (Type  
Solea cornuta Cuvier, designated by  
Jordan, Genera of Fishes, pt. 2, p.  
282, 1919.)

Differs from Zebrias in cycloid scales  
and first dorsal ray enlarged and  
free.



Aesopia cornuta (Cuvier)

2437

Solea cornuta Cuvier, Règne Animal,  
ed. , vol. 2, p. , 18 (on Jerree  
photoo Russell, Fishes of Coromandel,  
vol. 1, p. 56, pl. 72, 1803, type locality:

Aesopia cornuta Kaup, Archiv Naturges.,  
vol. 24, pt. 1, p. 98, 1858 (British India).

— Günther, Cat. Fishes Brit. Mus.,  
vol. 4, p. 487, 1862 (compiled). — Day,  
Proc. Zool. Soc. London, 1873, p. 238

( ). — Jordan and Starke,  
Proc. U. S. Nat. Mus., vol. 31, p. 235, fig.  
27, 1906 (Kagasaki). — Snyder, Proc.

U. S. Nat. Mus., vol. 42, p. 441, 1912  
(Kagoshima). — Jordan, Tanaka, Snyder,  
Journ. College Sci. Tokyo, vol. 33, p.  
336, fig. 285, 1913 (reference). —

Hubbs, Proc. U. S. Nat. Mus., vol. 48, p.  
493, 1915 (Swatow). — Regan, Ann.

Durban Mus., vol. 2, p. 218, 1920  
(Katal ). — Barnard, Ann.  
South African Mus., vol. 21, pt. 1, p. 409,



June 1925( ). —  
Norman, Records Indian Mus., vol. 30,  
 pt. 2, p. 185<sup>fig. 5</sup>, July 1928 (Madras, Yanjam,  
 Orissa, Martaban, 7 to 68 fathoms).

— Chu, Biol. Bull. St. John's Univ., Shanghai,  
 no. 1, p. 93, Jan. 1931 (reference). —

Schmidt, Trans. Pac. Comm. Acad.  
 Sci. U. S. S. R., vol. 2, p. 130, 1931  
 (Misaki).

Synaptura cornuta Day, Fishes of India,  
 pt. 3, p. 430, pl. 94, fig. 4, 1877; Fauna  
 British India, Fishes, vol. 2, p. 450,  
 1889. — Alcock, Journ. Asiatic Soc.  
 Bengal, vol. 58, pt. 1, no. 3, p. 287,  
 1889 (Bengal Bay). — Johnstone,  
 Ceylon Pearl Oyster Fisher., Supp.  
 Rep. 15, p. 206, 1904. — Jenkins, Mem.  
 Indian Mus., vol. 3, p. 29, 1910.

Synaptura potoo Bleeker, Verh.  
 Batavia. Genoot. (Bengal. Hind.),  
 vol. 25, p. 76, 1853 (on Jerree potoo  
Russell).



2439  
Synaptura quagga (not Kaup)  
Rutter, Proc. Acad. Nat. Sci.  
Philadelphia, 1897, p. (Swatow).



2440

Genus Aseraggodes Kaup  
Aseraggodes Kaup, Archiv  
Naturges., vol. 24, pt 1, p. 103, 1858.  
(Type Aseraggodes guttulatus  
Kaup, designated by Jordan,  
Genera of Fishes, pt. 2, p. 282,  
1919.)

Liachirus Günther, Cat. Fishes Brit.  
Mus., vol. 4, p. 479, 1862. (Type, Liachirus  
nitidus Günther, monotypic.)

Coryphillus Chabanand, Bull. Soc.  
Zool. France, vol. 56, 1931, p. 302. (Type,  
Aseraggodes filiger Weber, monotypic.)

left posterior nostril  
behind and above anterior  
one. Gill membranes united,  
free from isthmus. Scales  
ctenoid on both sides of body.



2440

Genus Aseraggodes Kaup  
Aseraggodes Kaup, Archiv  
Naturges., vol. 24, pt 1, p. 103, 1858.  
(Type Aseraggodes guttulatus  
Kaup, designated by Jordan,  
Genera of Fishes, pt. 2, p. 282,  
1919.)

Body oblong. Eyes on right side. Mouth more or less restricted. Minute teeth on left rami of jaws. Front nostrils on both sides tubular; posterior right nostril slit above mouth, looking downward; left posterior nostril tubular, behind and above anterior one. Gill membranes united, free from isthmus. Scales ctenoid on both sides of body.



Depth  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; head 3 to  $3\frac{1}{8}$ , width  $1\frac{2}{3}$  to  $1\frac{3}{4}$ . Snout  $2\frac{2}{3}$  to 3; eye 3 to  $3\frac{1}{4}$ , 1 to  $1\frac{1}{4}$  in snout, 1 to  $1\frac{1}{5}$  in interorbital; maxillary reaches opposite front eye edge,  $4\frac{1}{5}$  to  $4\frac{1}{2}$  in head; interorbital  $3\frac{1}{2}$  to 4, broadly convex; preopercle spine along upper edge  $2\frac{2}{5}$  to  $2\frac{3}{5}$ . Gill rakers 5 + 13, lanceolate, robust, about  $\frac{1}{3}$  of gill filaments, which  $1\frac{1}{3}$  in eye.

Scales 38 to 43 between gill opening and caudal base; 7 or 8 scales above lateral line, 22 or 23 below. Scales with 5 or 6 basal radiating striae; apical denticles 17 to 23, each with long slender rootlet; circuli very fine.

D. XIV or XV, 15, I or 16, I, last spine  $1\frac{2}{5}$  to  $1\frac{3}{5}$  in head, eighth ray  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ; A. III, 16, I or 17, I, third spine  $1\frac{1}{5}$  to  $1\frac{2}{5}$ , tenth ray  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ; least depth of caudal peduncle 2 to  $2\frac{2}{5}$ ; caudal rounded convexly behind,  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ; ventral 1 to  $1\frac{1}{8}$ .

Uniform blackish-brown, most examples with very narrow whitish edge to caudal posteriorly.

and Queensland.

East Indian region. Previously only known from the Moluccas we have the following examples from the Philippines, and Celebes, East Indies and China.



One straight axial lateral line on each side. Left side of head more or less covered with papillae or filaments which form fringe along profile of head and opercular border. Dorsal begins on snout. Dorsal and anal rays simple or divided at tips and caudal rays branched. Dorsal and anal free from caudal. No pectorals. Ventrals symmetrical, short based, free from anal. Vent median.

Indian Ocean to Japan and Australia, one species in fresh water.



749

Holacanthus nox Bleeker.

Holacanthus nox Bleeker, Nat. Tijds. Ned.

Indië, deel 5, 1853, p. 338. Ambonia. —

Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p.

51 (copied). — Bleeker, Atlas Ichth. Ind.

Neerl., vol. 9, 1877, p. 62, plate (6) 368, fig. 3

(Ambonia and Goram). — Ogilby, Mem.

Queensland Mus., vol. 5, 1916, p. 178 (Barrier  
Reef).



2442

Aseraggodes abnormis (Weber and Beaufort)

Achirus abnormis Weber and Beaufort,  
Fishes Indo Austral. Archip., vol. 5,  
p. 163, 1929 (type locality: Macassar,  
Celebes). — Chabanaud, Zool. Mededeel.  
Leiden, vol. 13, pts. 3-4, 1930, p. 192  
(type).



2443

Aseraggodes beauforti Chabanaud

Aseraggodes beauforti Chabanaud,  
Zool. Mededeelingen <sup>Leiden</sup>, vol. 13, <sup>p. 3-4,</sup> 1930, p.  
189 (type locality: Sea of Timor; on Weber);  
Bull. Soc. Zool. France, vol. 56, p. ~~298~~  
1931 (diagnosis in key). <sub>300</sub>

Aseraggodes cyaneus (not Alcock) Weber,  
Siboga Exped., vol. 57, p. 435, pl. 11, fig. 3,  
1913 (Timor Sea material). — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 154, 1929 (Weber's  
material).



2444

Aseraggodes cyaneus (Alcock)

Solea cyanea Alcock, Ann. Mag. Nat. Hist., Ser. 6, vol. 6, p. 439, 1890 (type locality: off Ganjam coast; Vizagapatam; 20 to 33 fathoms).

Solea (Achirus) cyanea Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Aseraggodes cyaneus Weber, Siboga Exped., vol. 57, p. 435, 1913 (~~Timor Sea, 216 meters~~). — Horman, Rec. Indian Mus., vol. 30, pt. 2, p. 188, fig. 7, July 1928 (Persian Gulf; Arabian Sea; Kathiawar; Laccadive Sea; north west of Calicut; Travancore; Ganjam; Vizagapatam; Bengal Bay; Gulf of Oman; Muscat; Maldives?; 20 to 148 fathoms). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 154, 1929 (<sup>part</sup> ~~Timor Sea material~~).

— Chabanand, Bull. Soc. Zool. France, vol. 61, 1931, p. 300 (diagnosis in key).  
(Zool. Mededeel., vol. 13, pts. 3-4, 1930, p. 188 (compiled);



Solea umbratilis Alecock, Journ.  
 Asiatic Soc. Bengal, vol. 63, pt. 2, p.  
 131, pl. 7, fig. 3, 1894 (type locality:  
 Bengal Bay, 91 to 107 fathoms).

Solea umbratilis Goode and Bean,  
 Oceanic Ichth., p. 536, 1895 (name).

Solea umbratilis Alecock, Illustrat.  
 Zool. Investigator, pt. 3, pl. 15, fig.  
 4, 1895; Cat. Deep Sea Fishes Indian  
 Mus., p. 129, 1899 (Bengal Bay,  
 Arabian Sea, Malabar Coast, 68  
 to 148 fathoms). — Regan, Journ.  
 Bombay Nat. Hist. Soc., vol. 16, p.  
 329, 1905 (Sea of Oman, 98 fathoms).

Solea (Achirus) umbratilis Alecock,  
 Journ. Asiatic Soc. Bengal, vol. 65,  
 pt. 2, p. 329, 1896.



Depth  $2\frac{1}{6}$  to  $2\frac{1}{2}$ ; head  $3\frac{1}{2}$  to  $3\frac{4}{5}$ , width 3 to  $3\frac{4}{5}$ . Snout end to lower orbit  $2\frac{3}{5}$  to 3 in head; lower orbit 7 to  $7\frac{3}{4}$ , 2 to  $2\frac{1}{3}$  in snout; upper  $\frac{1}{3}$  advanced from lower; maxillary extends  $\frac{1}{3}$  to  $\frac{2}{5}$  in lower orbit; mouth cleft 3 to  $3\frac{1}{5}$  in head from snout end; nasal tube long as pupil; scaly interorbital  $1\frac{1}{3}$  in lower orbit, concave. Gill rakers as feeble obsolete minute papillae; gill filaments  $1\frac{1}{4}$  in lower orbit.

Scales 58 to ~~60~~ 60 in lateral line from above gill opening to caudal base and 6 or 7 more on latter (9 forward to dorsal intersection); 22 or 23 above, 27



53

from Lethrinus haematopterus Schlegel in that the back is not so elevated anteriorly and the soft dorsal and anal also not so elevated. Especially is the anal higher than long, while in Lethrinus haematopterus it is noticeably longer than high.

Bleeker had 5 specimens, 220 to 260 mm. My specimens agree with his figure, though several features are conspicuous in alcoholic materials which he does not show. Thus the outer or anterior large lateral nuchal scales are quite dark brown and much contrasted. Also the caudal is very dark over its basal half or two thirds. The two dark transverse reddish basal lines Bleeker shows are not distinct at present in any of my specimens. In the present species the



2447

or 28 below. Scales all ctenoid.

Scales with 28 to 30 close set radiating basal striae; 10 or 11 rather long slender apical denticles, with 2 or 3 <sup>series</sup> basal elements; circuli fine, continuous. Right lateral line axial, complete. Left lateral line complete, distinct, also with front extension along and close below front dorsal base.

D. 73 or 74, fin height  $2\frac{1}{4}$  to  $2\frac{3}{5}$  in head; A. 53 or 54, fin height 2 to  $2\frac{1}{8}$ ; caudal  $1\frac{1}{6}$  to  $1\frac{1}{4}$ , convex behind; least depth of caudal peduncle  $1\frac{7}{8}$  to  $2\frac{1}{4}$ ; ventral  $2\frac{2}{5}$  to  $2\frac{3}{5}$ .

Ecom drab to fawn color on ~~upper~~ right side, with obscure though slightly larger blotches formed more or less as darker scales



<sup>5 to 7</sup> above, 14 or 15 below, 7 ~~or 8~~ <sup>to 9</sup> predorsal; caudal and pectoral bases finely scaled. Scales with 12 ~~or 13~~ <sup>to 18</sup> basal radiating striae, with 1 to 4 medial auxiliaries; ~~11 to 15~~ <sup>87</sup> to 155 apical denticles, with 4 to 8 transverse series of basal segments; circuli very fine.

D. X, 9, ±, fourth spine  $2\frac{1}{5}$  to 3 in head, ± fourth ray  $2\frac{1}{8}$  to  $2\frac{1}{5}$ ; A. III, 8, ±, third spine  $2\frac{7}{8}$  to 3, third ray  $2\frac{1}{3}$  to  $2\frac{3}{4}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , emarginate; least depth of caudal peduncle  $2\frac{3}{5}$  to 3 ~~or 3~~; pectoral ~~1~~ to  $1\frac{1}{5}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ .

Largely pale brownish, little paler below or on abdomen. Head little darker brown than body. Vertical fins rather dark, especially caudal, which dusky basally. Paired fins dull brown. Iris dark brown.

East Indies, Philippines. Differs



around slightly paler or lighter blotches, usually as axial row along lateral line and another series on body along submarginally to dorsal and anal fin bases. Blotches more or less - as about 5 transverse series, often variable or with intermediate blotches. Orbits gray. Vertical fins with scattered small dark spots on rays, often larger and more scattered spots basally. Left side whitish, dark spots on vertical fins very obscure or indistinct.

Arabian Sea, Persian Gulf, Laccadive Sea, India, Bengal Bay, Philippines, China Sea.



Depth  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ; head  $2\frac{1}{2}$  to  $2\frac{7}{8}$ ,  
width  $2\frac{1}{8}$  to  $2\frac{4}{5}$ . Snout  $1\frac{3}{4}$  to  $2\frac{1}{5}$  in  
head; eye 3 to  $4\frac{1}{5}$ ,  $1\frac{1}{2}$  to  $2\frac{2}{5}$  in snout,  
greater to  $1\frac{1}{4}$  in interorbital <sup>with age</sup>; maxillary  
reaches opposite front nostril or about  
 $\frac{3}{4}$  in snout,  $2\frac{2}{5}$  to  $2\frac{7}{8}$  in head; lips  
broad, coriaceous; broad bands of villiform  
teeth in jaws, with outer row in each  
enlarged and usually conic, as 4 canines  
in front of each and last ~~maxilla~~ <sup>3 to</sup> 5 each  
side as broad molars; interorbital  $3\frac{3}{5}$   
to  $4\frac{4}{5}$ , broadly convex; cheeks and most  
naked region of head with fine weak  
striae, on cheeks as vertical parallel  
lines, otherwise as finely venulose. Gill  
rakers  $2\frac{to\ 5}{\cancel{maxilla}} + 5\frac{or\ 6}{\cancel{maxilla}}$ , short stout tubercles,  
little less than gill filaments.

Scales 42 to ~~44~~ <sup>46</sup> in lateral line to  
caudal base and ~~2~~ <sup>2 to</sup> ~~on~~ 5 more on latter;



2658, 2659, D. 5272. Corregidor Light, N.  $26^{\circ}$  E., 25.50 miles (lat.  $14^{\circ}$  N.,  $120^{\circ} 22' 30''$  E.), China Sea vicinity southern Luzon. In 118 fathoms. July 14, 1908. Length 115 to 124 mm.

2494

2492, D. 5273. Corregidor Light, N.  $27^{\circ}$  E., 27.25 miles (lat.  $13^{\circ} 58' 45''$  N., Long  $120^{\circ} 21' 35''$  E.), China Sea, vicinity southern Luzon. In 114 fathoms. July 14, 1908. Length 83 to 120 mm.

2690. D. 5302. China Sea, vicinity Hong Kong (lat.  $21^{\circ} 42'$  N., long.  $114^{\circ} 50'$  E.). In 38 fathoms. August 9, 1908. Length 93 mm.

3379. D. 5454. Legaspi Light, S.  $64^{\circ}$  W., 5.7 miles (lat.  $13^{\circ} 12'$  N., long.  $123^{\circ} 50' 30''$  E.), east coast of Luzon. In 153 fathoms. June 7, 1909. Length 119 mm.



1751. D. 5265. Matocot Point, <sup>2450</sup>  
Luzon, S. 17° E., 3.30 miles (lat.  
13° 41' 15" N., long. 120° 00' 50" E.),  
Verde Island Passage - and  
Batangas Bay. In 135 fathoms.  
June 6, 1908. Length 115 mm.



1751. D. 5265. Matocot Point,  
S. 22° E., 7 miles (lat. 13° 44' 36" N.,  
long. 120° 59' 15" E.), Verde Island  
Passage and Batangas Bay. In  
115 f.



2451

Aseraggodes dubius Weber

Aseraggodes dubius Weber, Siboga  
Exped., vol. 57, p. 438, fig. 82, 1913  
(type locality: lat.  $6^{\circ}16'15''$  S., long.  
 $114^{\circ}37'$  E., Java Sea, 82 meters).

— Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 5, p.  
156, fig. 39, 1929 (type: Java Sea;  
Bali). — Chabanava, Bull. Soc. Zool.  
France, vol. 56, 1931, p. 300 (diagnosis  
in key).

Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930,  
p. 189 (type);



2452

Depth  $2\frac{1}{5}$  to  $2\frac{2}{3}$ ; head  $3\frac{4}{5}$  to 4, width  $2\frac{3}{4}$  to 3. Snout end to lower orbit 3 to  $3\frac{3}{4}$  in head; lower orbit 5 to  $6\frac{1}{2}$ ,  $1\frac{1}{2}$  to 2 in snout; upper orbit advanced  $\frac{1}{2}$  to  $\frac{3}{5}$  from lower orbit; mouth cleft reaches  $\frac{1}{2}$  to  $\frac{3}{4}$  in lower orbit, curved, length  $2\frac{3}{4}$  to  $3\frac{3}{4}$  in head from front end of snout; interorbital narrow scaly groove, width  $\frac{1}{2}$  of lower orbit. No gill rakers; gill filaments long as lower orbit.

Scales 62 to 64 in lateral line from above gill opening to caudal base (10 to 12 more forward on head to dorsal intersection; 25 or 26 above, 27 or 28 below. Caudal scaly basally, other fins naked, except scaly basal sheath. Scales with 21 to 24 slightly radiating basal striae; 9 to 11 slender apical denticles, with 4 or 5 transverse series of basal elements; circuli fine. Lateral line continuous, present on both sides. Scales of both sides ctenoid. D. 68 to 71, fin height 2 to  $2\frac{1}{2}$



in head; A. 48 to 51, fin height <sup>2453</sup>  
 $1\frac{7}{8}$  to  $2\frac{1}{4}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ,  
convex behind; least depth of caudal  
peduncle 2 to  $2\frac{1}{5}$ ; ventral  $2\frac{2}{5}$   
to  $2\frac{1}{2}$

Rather pale brown, <sup>on right side</sup> with traces of  
indistinct darker blotches along dorsal  
and anal edges of body, most distinct  
in young. Vertical fins with dark  
spots on rays, also most distinct in  
~~adult~~ young. Orbits dark gray. Left  
side whitish, fins scarcely darker.  
East Indies, Philippines.



2454

20065. Batangas, Batangas River, Luzon. June 7, 1908. Length 49 mm.

2689. D. 5302. China Sea, vicinity Hong Kong (lat.  $21^{\circ}42'N$ , long.  $114^{\circ}50'E$ ). In 38 fathoms. August 9, 1908. Length 84 mm.

13 examples. Davao, Mindanao. May 16, 1908. Length 52 to 62 mm.

1645. D. 5266. Matocot Point, S.  $22^{\circ}E$ , 7 miles (lat.  $13^{\circ}44'36''N$ , long.  $120^{\circ}59'15''E$ ), Verde Island Passage and Batangas Bay. In 100 to 135 fathoms. June 8, 1908. Length 90 mm.

1 example. D. 5105. Sueste Point Light, N.  $57^{\circ}W$ , 1.90 miles (lat.  $14^{\circ}43'55''N$ , long.  $120^{\circ}12'50''E$ ), China Sea off southern Luzon. In 25 fathoms. January 8, 1908. Length 67 mm.



~~Example.~~



2455

2998. D. 5376. Jayabas Light  
(outer), N.  $53^{\circ}$  W., 18.7 miles  
(lat.  $13^{\circ}42'50''$  N., long.  $121^{\circ}51'30''$  E.),  
vicinity Marinduque Island. In 90  
fathoms. March 2, 1909. Length  
107 mm.

3721. D. 5371. Jayabas Light  
(outer), N.  $43^{\circ}$  W., 16 miles (lat.  
 $13^{\circ}49'40''$  N., long.  $121^{\circ}40'15''$  E.),  
vicinity Marinduque Island. In  
83 fathoms. February 24, 1909.  
Length 101 mm.



2456

Aseraggodes filiger Weber

Aseraggodes filiger Weber, Siboga  
Exped. vol. 57, pp. 436, pl. 11, fig. 4,  
1913 (type locality: Buha Bay,  
Rotti Island, 34 meters). — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 152, fig. 40, 1929  
(Java Sea; type). — Chabanaud,  
Zool. mededeel. Leiden, vol. 13, pts.  
3-4, 1930, p. 192 (type).



2457

Aseraggodes guttulatus Kaup

Aseraggodes guttulatus Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 103, 1858  
(type locality: no locality). — Chabanaud,  
Bull. Soc. Zool. France, vol. 56, 1931, p. 362 (diagnosis in key).  
Solea guttulata Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 477, 1862  
(copied).

Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930,  
p. 190 (types);



2458

Aseraggodes haackeanus (Steindachner)

Solea (Achirus) haackeana Steindachner,  
Zeitschrift für Naturwiss. Wien, vol. 20, p.  
95, 1883 (type locality: South  
Australia); Sitzb. Ber. Akad. Wiss.

Wien, math.-nat. Kl., vol. 88, pt. 1, p.  
1104, pl. 1, fig. 3, 1884.

Aseraggodes haackeana McCulloch,  
Mem. Queensland Mus., vol. 5, p. 59,  
1916. — Waite, Rec. South Austral.  
Mus., vol. 2, p. 160, fig. 262, 1921;  
Fishes of South Austral., p. 184,  
fig. , 1923.

Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190<sup>v</sup> (compiled);

Aseraggodes haackeanus Norman,  
Biol. Res. Endeavour, vol. 5, pt. 5, p.  
289, June 15, 1926 (compiled). —

McCulloch, Austral. Mus. Mem., no.  
5, pt. 2, p. 283, Sep. 10, 1929 (compiled).

— Chabanand, Bull. Soc. Zool. France, vol.  
56, p. 291, 1931 (diagnosis in key).



1801, p. 231 (India). — Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 455, 478, plate 12, fig. 1 (East Indies).

Chetodon macrolepidotus Bonnaterre, Tabl. Ichth., 1788, p. 85, plate 46, fig. 175 (India).

Heniochus macrolepidotus Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 70<sup>73</sup> (Mauritius, Manila, Celebes, New Guinea, Tringremale). —

Rüppell, Neue Wirbelth. Fische, 1839, p. 36

(Red Sea). — Schlegel, Faun. Japon. Poiss., sec. 5-6, 1844, p. 82, plate 44, fig. 1 (Nagasaki).

— Richardson, Ichth. China Jap., 1846, p. 246 (copied). — Günther, Cat. Fish. Brit. Mus.,

vol. 2, 1860, p. 39 (Ceylon, Amboina, Port Essington, Australia). — Guichenot, Notes

S. Remion, vol. 2, 1862, p. 26. — Bleeker,

Ned. Tijds. Dierk., deel 2, 1865, p. 31 (Manila Bay). — Day, Fishes of Malabar, 1865, p. 33.

— Playfair, Fishes of Zanzibar, 1866, p. 37.

— Klunzinger, Verh. zool. bot. Ges. Wien,



*Solea* (*Aseraggodes*) *textilis* Ramsay and <sup>2459</sup>  
Ogilby, Proc. Linn. Soc. New South Wales,  
ser. 2, vol. 1, pt. 1, p. 6, May 25, 1886  
(type locality: St. Vincent Gulf,  
South Australia, 12 fathoms).



bands diffuse within brown and little marked.

Philippines, Formosa. A handsome species, greatly like Heniochus varius, but with pale lips and a pale band vertically across the muzzle. It also has a uniformly pale or light soft dorsal and caudal, besides most of the spinous dorsal.



2460

Liseraggodes jaubertensis (Rendahl)

Achirus jaubertensis Rendahl, Kon.  
Svensk. Vet. Akad. Handl. Stockholm,  
vol. 61, no. 9, p. 16, 1921 (type locality:  
Cape Jaubert, North West Australia).

Liseraggodes jaubertensis Mc Culloch,  
Austral. Mus. Mem., No. 5, pt. 2, p.  
284, Sep. 10, 1929 (compiled).

Norman, Biol. Res. Endeavour, vol. 5, pt. 5,  
p. 292, June 15, 1926 (reference). —



Aseraggodes kaianus (Günther)<sup>2461</sup>

Solea kaiana Günther, Rep. Voy.  
Challenger, vol. I, pt. 6, p. 49, pl. 21, fig.  
C, 1880 (type locality: Ki Islands,  
129 fathoms).

Aseraggodes kaianus Weber and  
Beaufort, Fishes Indo Austral. Archip,  
vol. 5, p. 155, 1929 (type).



2462

Aseraggodes blunzingeri (Weber)

Pardachius blunzingeri Weber, Nova Guinea, vol. 5, pt. 2, p. 250, pl. 13, fig. 2, 1908 (type locality: Meranke River mouth; Alkmaar, New Guinea). —  
Mc Culloch, Austral. Mus. Mem. 10, p. 94, 1928 (compiled).

↑ — Horman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 288, June 15, 1926 (compiled).

Nova Guinea, vol. 5, pt. 2, p. 250, 1913 (Earen River; Lorentz River; Biwak River; Alkmaar). — Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 157, 1929 (Weber's materials). — Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (type).



2462

Aseraggodes blunzingeri (Weber)

Pardachius blunzingeri Weber, Nova Guinea, vol. 5, pt. 2, p. 250, pl. 13, fig. 2, 1908 (type locality: Meranke River mouth; Alkmaar, New Guinea). — Mc Culloch, Austral. Mus. Mem., no. 5, pt. 2, p. 284, Sep. 10, 1929 (reference). Aseraggodes blunzingeri Weber, Nova Guinea, vol. 9, pt. 4, p. 588, 1913 (Earen River; Lorentz River; Biwak River; Alkmaar). — Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 157, 1929 (Weber's materials). — Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (type).



2463

Aseraggodes kobensis (Steindachner)

Volea (Achirus) kobensis Steindachner,  
Ann. Hofmus. Wien, vol. 11, p. 218,  
1896 (type locality: Kobe).

Aseraggodes kobensis Jordan and Snyder,  
Annot. Zool. Japon., vol. 3, p. 122, 1901  
(reference).

Aseraggodes kobensis Jordan and Starck,  
Proc. U. S. Nat. Mus., vol. 31, p. 230,  
fig. 24, 1906 (Nagasaki). — Snyder,  
Proc. U. S. Nat. Mus., vol. 42, p. 440,  
1912 (Shimizu). — Jordan, Tanaka,  
Snyder, Journ. College Sci. Tokyo,  
vol. 33, p. 333, fig. 282, 1913 (reference).  
— Izuka and Matsuura, Cat. Zool. Spec.  
Mus. Tokyo, Verteb., p. 115, 1920  
(Enoura, Suruga). — Chabanand,  
Bull. Soc. Zool. France, vol. 56, p. 300,  
1931 (diagnosis in key).  
(Zool. Mededel., vol. 13, pts. 3-4, 1930, p. 189  
(~~compiled~~) type);



2464

Aseraggodes microlepidotus Weber

Aseraggodes microlepidotus Weber,  
Siboga Exped., vol. 57, p. 438, pl. 11,  
fig. 2, 1913 (type locality: lat.  $8^{\circ}19'S$ ,  
long.  $117^{\circ}41'E$ , Saleh Bay, Sumbawa,  
274 meters). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol. 5,  
p. 153, 1929 (type). — Chabanaud,  
Bull. Soc. Zool. France, vol. 56, p. 300,  
1931. (diagnosis in key).

(Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930,  
p. 189 (type);



2465

Aseraggodes macleayanus (Ramsay)

Tolea macleayana Ramsay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 462, 1881 (type locality: Manly, New South Wales).

Aseraggodes macleayanus Ogilby, Mem. Queensland Mus., vol. 5, p. 137, pl. 15, 1916 ( ). —

McCulloch, Austral. Zool., vol. 2, p. 47, pl. 13, 1921. — Norman, Biol.

Res. Endeavour, vol. 5, pt. 5, p. 289,

June 15, 1926 (compiled). — McC

Culloch, Austral. Mus. Mem., no. 5, <sup>Richmond River,</sup>

pt. 2, p. 283, Sep. 10, 1929 (~~compiled~~)

(Gloucester Head; 16 to 35 fathoms).

Aseraggodes macleayana Roughley,  
Fishes of Australia, p. 175, pl. 60,  
1916.

(— Chabanaud, Zool. Meded. Leiden, vol. 13, pts. 3-4, 1930, p. 191 (compiled).



724

Chaetodon dux Gmelin, Syst. Nat. Linn., 1789,  
p. 1255. India. — Forster, Faun. Indica,  
1795, p. 15.

Holacanthus dux Lacépède, Hist. Nat. Poiss.,  
vol. 4, 1802, pp. 527, 534 (Japan). — Cuvier,  
Hist. Nat. Poiss., vol. 7, 1831, p. <sup>184</sup>~~138~~ (Dorey  
Harbor, New Guinea). — Rüppell, Neue Wirbelth.  
Fische, 1839, p. 37 (Red Sea).

Holacanthus chrysurus Cuvier, l.c., p. <sup>188</sup>~~141~~.

Dorey Harbor, New Guinea.

Holacanthus forsteri Günther, Cat. Fish.

Brit. Mus., vol. 2, 1860, p. 48, Ceram (name only).

Holacanthus forsteri Bleeker, Verh. Kon.

Akad. Wet., Amsterdam, deel 17, no. 2, 1877,

p. 139 (name in synonymy).

Holacanthus bispinosus (part) Jordan and

Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1,

1903 (1905), p. 378 (no plate, description from  
Samoaan examples).



*Solea fluviatilis* Ramsay, Proc. Linn.  
Soc. New South Wales, vol. 7, pt. 1, p. 111,  
May 23, 1882 (type locality: Hunter  
River, New South Wales, in fresh  
water).



723

363, fig. 5 (non fig. 3) (Celebes, Flores, Timor,  
Ceram, Amboina, Banda, New Guinea).

{ — Day, Faun. British India, vol. 2, 1889, p. 17.

{ — Klunzinger, Fisch. Roth Meer., 1884, p. 60.

— Sauvage, Hist. Nat. Madagascar, Poiss.; 1891,  
p. 266, plate 33, fig. 3. — Jordan and Seale,

Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 34

(Manila). — Weber, Siboga Exped., band 65,

1913, p. 312 (Banda). — Fowler, Bishop Mus.

Bull., no. 22, 1925, p. 34 (Samoa).

Chaetodon fasciatus (non Forsk.) Bloch, Naturg.

Aust. Fisch., band 3, 1787, p. 53, plate 195

(East Indies). — Walbaum, Arted. Pisc.,

vol. 3, 1792, p. 406.

Chaetodon fasciatus Bonnaterre, Tabl. Ichth.,

1788, p. 92, plate 92, fig. 382 (East Indies).

Chaetodon boddaerti Gmelin, Syst. Nat. Linn.,

1789, p. 1243 (on Boddaert 1772).

Acanthopodus boddaerti Lacépède, Hist. Nat.

Poiss., vol. 4, 1802, pp. 558, 559 (Sea of Indies).



2467

Aseraggodes melanospilus (Bleeker)

Archius melanospilus Bleeker, Nat.  
Tijds. ned. Indië, vol. 7, p. 257,  
1854 (type locality: Manado, Celebes).

Archius melanospilus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 4, p. 23, pl.  
(13) 244, fig. 1, 1866-72 (Singapore,  
Celebes, Batjan, Amboina).

Liachius melanospilus Weber and  
Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 158, fig. 42 (colored  
side), fig. 43 (blind side of head),  
1929 (Bleeker's specimens; type of  
→ Liachius melanospilus Bleeker).

† Aseraggodes melanospilus Chabanaud,  
Zool. Mededeel. Leiden, vol. 13, pts.  
3-4, 1930, p. 191 (type of Liachius  
nitidus).

Nat. Mus., vol. 25, p. 366, <sup>fig. 28,</sup> 1902 (Guan,  
Formosa). — Jordan and Starbuck,



2467

Aseraggodes melanospilus (Bleeker)

Archius melanospilus Bleeker, Nat.  
Tijds. Ned. Indië, vol. 7, p. 257,  
1854 (type locality: Manado, Celebes).

Archius melanospilus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 4, p. 23, pl.  
(13) 244, fig. 1, 1866-72 (Singapore,  
Celebes, Batjan, Amboina).

Liachius melanospilus Weber and  
Beaufort, Fishes Indo Austral.

Archip., vol. 5, p. 158, fig. 42 (colored  
side), fig. 43 (blind side of head),  
1929 (Bleeker's specimens; type of

→ Liachius nitidus Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 479, 1862 (type  
locality: China). — Steindachner,  
Sitzb. Ber. Akad. Wiss. Wien, math.-  
nat. Kl., vol. 55, pt. 1, p. 588 (China).

— Jordan and Evermann, Proc. U. S.  
Nat. Mus., vol. 25, p. 366, <sup>fig. 28,</sup> 1902 (Guan,  
Formosa). — Jordan and Starke,

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pung  
kind  
2000



lateral line. <sup>107</sup>  
hind half of each lobe blackish. Length  
93 mm.  $\frac{107}{20} = 5.35$



2468

Proc. U. S. Nat. Mus., vol. 31, p. 231,  
fig. 25, 1906 (Yilan). — Jordan,  
Tanaka, Snyder, Journ. College  
Sci., vol. 33, p. 333, fig. 283, 1913  
(reference). — Fowler and Bean,  
Proc. U. S. Nat. Mus., vol. 62, art.  
2, p. 67, 1922 (Talsao, Formosa). —  
Rendahl, Arkiv Zool., vol. 16, no. 2,  
p. , 1924 (Swatow; Kuang-  
Tung). — Chu, Biol. Bull. St.  
John's Univ., Shanghai, no. 1, p. 93,  
Jan. 1931 (reference).



2469

Aseraggodes melanostictus (Peters)

Solea (Achirus) melanosticta Peters,  
Monatsh. Akad. Wiss. Berlin, 1876,  
<sup>(1877)</sup> p. 845 (type locality: Bougainville  
Island, 40 fathoms).

Aseraggodes melanostictus Fowler,  
Mem. Bishop Mus., vol. 10, p. 94,  
1928 (compiled). — McCulloch,  
Austral. Mus. Mem., no. 5, pt. 2, p.  
284, Sep. 10, 1929 (reference).

Horman, Biol. Res. Endeavour, vol. 5,  
pt. 5, p. 290, fig. 12, June 15, 1926  
(~~Gladstone, Queensland~~).  
part; not material

— Chabanand, Zool. Mededeel. Leiden, vol.  
13, pts. 3-4, 1930, p. 190 (type).



2470

Aseraggodes normani Chabanaud

Aseraggodes normani Chabanaud, Ann.  
Mag. Nat. Hist., ser. 10, vol. 5, p. 241,  
1930 (~~type locality: Queensland~~  
on Norman).

Aseraggodes melanostictus (not Peters)  
Norman, Biol. Res. Endeavour, vol. 5,  
pt. 5, p. 290, fig. 12, June 15, 1926  
(type locality: Gladstone, Queensland).



2471

Aseraggodes pellucidus (Bennett)

Achirus pellucidus Bennett, Whaling  
Voyage, p. 277, 1840 (type locality: J  
lat.  $27^{\circ}$  S., long.  $170^{\circ}$  W., Pacific Ocean;  
day's sail from Marquesas Islands).

— Fowler, Mem. Bishop Mus.,  
vol. 10, p. 93, 1928 (compiled).

Aseraggodes pellucidus Jordan and  
Seale, Bull. Bur. Fisher., vol. 25,  
p. 413, 1905 (1906) (name).



2472

Aseraggodes ramsayi (Ogilby)

Solea ramsayi Ogilby, Mem. Austral.  
Mus., vol. 2, p. 70, Pl. 3, fig. 4, 1889  
(type locality: Lord Howe Island).

Aseraggodes ramsayi Waite, Rec.  
Austral. Mus., vol. 5, pt. 3, p. 226  
(reference).



Aseraggodes sinus-arabici Chabanaud

Aseraggodes sinus-arabici Chabanaud,  
Bull. Soc. Zool. France, vol. 66, 1931,  
p. 296 (type locality: Gulf of Suez,  
Djibouti).



2474

Aseraggodes texturatus Weber

Aseraggodes texturatus Weber, Siboga  
Exped., vol. 57, pt. , p. 437, fig. 81,  
1913 (type locality: lat.  $10^{\circ}24'9''$  S., long.  
 $123^{\circ}28'7''$  E., Timor Sea, 216 meters).  
— Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 5, p. 155, fig. 41,  
1929 (type). — Chabanaud, Zool. Mededel.  
Leiden, vol. 13, pts. 3-4, 1930, p. 189 (type).



2475

Genus Pardachirus Günther

Pardachirus Günther, Cat. Fishes

Brit. Mus., vol. 4, p. 478, 1862.

(Type Achirus marmoratus Lacépède,  
designated by Jordan, Genera of Fishes,  
pt. 3, p. 319, 1919.)

Body oblong. Eyes on right side.  
Mouth strongly restricted, more  
developed on right side than on  
blind side. Minute teeth on left  
rami of jaws only. Front nostril  
wide tube above middle of mouth;  
hind nostril before eye; nostrils  
on blind side both narrow tubes,  
placed above each other and well  
above mouth. Gill membranes  
confluent, free from isthmus.  
Scales feebly ctenoid, smaller  
ones along vertical fins cycloid.



745  
1249. Candaraman Island. January  
4, 1909. Length 91 mm.

7966, 16441, 21453 to 21455. Danawan  
Island and Si Amil Island. September  
27, 1909. Length 56 to 92 mm.

12694. Gandra Island. September  
20, 1909.

4840 and 22230. Little Santa Cruz  
Island. May 26, 1908. Length 89 to 105 mm.

3929 and 4739. Makyan Island.  
November 29, 1909. Length 70 to 88 mm.

4830. Malampa Island. September 8,  
1909. Length 103 mm.

4712 [1371]. Malapascua Island.  
March 16, 1909. Length 112 mm. Blue  
black. Lateral spot clear white. Dorsal  
spines and membranes black, not yellow  
as shown in Bleeker's plate; tip of  
soft dorsal purple. Anal edge lemon  
yellow on a bluish white stripe.



(scales may also become cycloid through wear). Straight axial lateral line on both sides, also second on blind side along upper profile of neck, beginning on snout. Left side of head covered with rather long filaments, forming fringe along lower profile and opercular borders of both sides. Dorsal and anal separate from caudal. All vertical fin rays divided. Each dorsal and anal ray with basal pore. No pectorals. Ventrals unsymmetrical, right one long based, membrane attached posteriorly on base of first anal ray; left one short based and



terminally, variably dark.

744

East Indian region. The large whitish superior lateral blotch is variable in size, extending over from 3 to 6 scales in width.



less developed. Vent. 2477  
asymmetrical, on right side.

Indian and Western Pacific  
Oceans.



743

Depth  $1\frac{4}{5}$  to  $1\frac{7}{8}$ ; head  $2\frac{7}{8}$  to  $3\frac{1}{2}$ , width  $1\frac{3}{5}$  to 2, snout 3 to  $3\frac{1}{5}$ ; eye 3 to  $3\frac{1}{2}$ , 1 to  $1\frac{1}{6}$  in snout, equals interorbital or slightly greater in young; maxillary reached nostrils, to eye in young,  $3\frac{1}{4}$  to  $3\frac{3}{5}$  in head; interorbital  $3\frac{1}{4}$  to  $3\frac{2}{3}$ , broadly convex; preopercle spine along upper edge  $2\frac{1}{4}$  to  $4\frac{3}{4}$ . Gill rakers 5+11, robust, lanceolate, longest  $\frac{1}{4}$  of gill filaments which  $1\frac{2}{3}$  in eye.

Scales 38 to 40 between gill opening and caudal base; 7 scales above lateral line, 20 or 21 scales below. Scales with 6 to 9 basal radiating striae; apical denticles 15 to 19, each with long slender rootlet; circuli fine.

D. XIV, 16, I or 17, I, last spine  $1\frac{2}{3}$  to  $1\frac{3}{4}$  in head, eighth ray 1 to  $1\frac{1}{5}$ ; A. III, 16, I, or 17, I, third spine  $1\frac{3}{5}$  to  $1\frac{4}{5}$ , eighth ray  $1\frac{1}{4}$  to  $1\frac{1}{3}$ ; least depth of caudal peduncle 2 to  $2\frac{1}{5}$ ; caudal rounded convexly behind, 1 to  $1\frac{1}{5}$ ; pectoral 1 to  $1\frac{1}{8}$ ; ventral  $3\frac{1}{8}$  to  $3\frac{1}{4}$  in combined head and body.

Generally blackish, head with slightly brown tint. Dorsal and preopercle spine with blue tinge. Large white blotch on side of back. Upper edge of spinous dorsal narrowly bluish. Hind caudal edge narrowly whitish to grayish, with submarginal blackish band. Entire lower anal edge broadly whitish, with narrow dividing bluish line. Paired fins dusky-brown, ventrals pale to whitish.



2478

The following doubtful species  
is not located by Norman:

Pardachirus maculatus (Schneider)  
Pleuronectes maculatus Schneider,  
Syst. Ichth. Bloch, p. 157, 1801  
(type locality: Tranquebar).  
Achirus maculatus Day, Fishes  
of India, pt. 3, p. 427, 1877 (type);  
Fauna British India, Fishes,  
vol. 2, p. 447 (compiled).



742

Holacanthus tibicen Cuvier.

Holacanthus tibicen Cuvier, Hist. Nat. Poiss.,  
vol. 7, 1831, p. ~~130~~<sup>173</sup>. no locality (Holland Collection).  
— Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p.  
46 (copied). — Bleeker, Atlas Ichth. Ind.  
Néerl., vol. 9, 1877, p. 62, plate (8) 370, fig. 4  
(Celebes, Flores, Solor, Ternate, Ambona, Ceram).  
— Waite, Records Austral. Mus., vol. 3, 1900,  
p. 203 (Lord Howe Island). — Jordan and  
Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 547  
(Naha, Riu Kiu). — Weber, Siboga Exped., band  
65, 1913, p. 312 (Banda).

Holacanthus leucopleura Bleeker, Nat. Tijds.  
ned. Indie, deel 5, 1853, p. 79. Lawajing,  
Solor. — Günther, Cat. Fish. Brit. Mus., vol.  
2, 1860, p. 46 (Ambona). — Günther, Cruise  
of Curacao, Branchley, 1873, p. 410 (Misol,  
Moluccas).



Pardachirus hedleyi Ogilby

2429

Pardachirus hedleyi Ogilby, Mem.  
Queensland Mus., vol. 5, p. 144, pl.  
17, July 10, 1916. (type locality:  
Port Jackson, New South Wales).

— McCulloch, Austral. Mus. Mem.,  
no. 5, pt. 2, p. 284, Sep. 10, 1929  
(reference). — Norman, Rec. Indian  
Mus., vol. 30, pt. 2, p. 188, July  
1928 (diagnosis in key).

— McCulloch, Austral. Zool., vol. 2,  
p. 47, pl. 13, 1921. — Norman, Biol. Res.  
Endeavour, vol. 5, pt. 5, p. 288, June  
15, 1926 (compiled); Rec. Indian  
Mus., vol. 30, pt. 2, p. 188, July 1928  
(diagnosis in key).

Achirus hedleyi Chabanand, Zool. Anzeiger,  
vol. 93, pt. 3/4, 1931, p. 101 (diagnosis in  
key).



We feel certain that the young example described by Day is the present species, and that its so called yellow coloration is the result of preservation. Day mentions his example was captured "'some years since'". We find a still smaller example than Day's type and it shows a brown coloration like our other specimens. Moreover its tail is slightly emarginate, as Day shows. Harpurus gnophodes is the adult stage, with greatly increased narrow blue longitudinal lines and many having faded from the type. We are thus able to establish the species with some indication of its life cycle.



2480

Pardachirus marmoratus (Lacépède)  
Achirus marmoratus Lacépède,  
Hist. nat. Poiss., vol. 4, pp. 658,  
660, 1802 (type locality: Mauritius);  
vol. 3, pl. 12, fig. 3, 1800. — Kaup,  
Archiv naturges., vol. 24, pt. 1, p.  
102, 1858 (reference). — Chabanaud, Zool.  
Anzeiger, vol. 93, pt. 3/4, 1931, p. 102 (diagnosis in key).

Pardachirus marmoratus Günther,  
Cat. Fishes Brit. Mus., vol. 4, p. 478,  
1862 (Madagascar). — Norman,  
Rec. Indian Mus., vol. 30, pt. 2,  
p. 188, July 1898 (~~diagnosis in key~~)  
Muscat; Persian Gulf).

— Sauvage, Hist. nat. Madagascar,  
Poiss., p. 472, 1891. — Barnard, Ann.  
South African Mus., vol. 21, pt. 1, p.  
405, June 1925.



Depth  $1 \frac{7}{8}$  to 2; head  $3 \frac{2}{5}$  to  $3 \frac{3}{5}$ , width  $1 \frac{1}{5}$  to  $1 \frac{2}{5}$ .

to  $1 \frac{4}{5}$ ; eye 3 to 4, 2 to  $3 \frac{1}{4}$  in snout, 1 to  $1 \frac{1}{2}$  in interorbital; teeth I2 to I4 in each jaw, rather large; maxillary 3 to  $4 \frac{1}{5}$  in head; interorbital  $2 \frac{3}{4}$  to 3, convexly elevated; opercle, preopercle flange and humeral arch with few coarse, obsolete striae. Gill rakers  $5 + 15$ , short, weak, flexible points.

Scales very small, broad, with very fine numerous circuli; with 15 to 27 apical denticles, which with 4 or 5 transverse series of basal elements.

D. IX, 24, 1 or 25, 1, last spine  $1 \frac{4}{5}$  to  $1 \frac{7}{8}$  in head, first ray  $1 \frac{1}{3}$  to  $1 \frac{3}{4}$ ; A. III, 23, 1 or 24, 1, third spine  $2 \frac{1}{5}$  to  $2 \frac{2}{5}$ , first ray  $1 \frac{3}{5}$  to 2; caudal deeply emarginate, lunate, tips long and slender with upper usually little longer,  $2 \frac{1}{3}$  to  $2 \frac{2}{5}$  in combined head and body; least depth of caudal peduncle  $2 \frac{1}{5}$  to  $2 \frac{1}{2}$  in head; pectoral  $3 \frac{1}{8}$  to  $3 \frac{1}{4}$  in combined head and body; ventral  $3 \frac{1}{5}$  to  $3 \frac{1}{4}$ ; caudal spine 3 to  $3 \frac{2}{3}$  in head.



? Pleuronectes barbatus Bonnaterre,  
 Encyclop. Méth. Ich., p. 74, 1788  
 (type locality: unknown locality).

— Shaw and Nodder, Naturalists  
 Miscellany, vol. 21, p. , 1810  
 (India; Red Sea).

Acherus barbatus Lacépède, Hist.  
 Nat. Poiss., vol. 4, pp. 658, 660, 1802  
 (no locality). — Geoffroy, Ann.  
 Mus. Hist. Nat. Paris, vol. 1, p.  
 152, pl. 11, ( ).

— Rüppell, Atlas Reise nördl.  
 Afrika, Fische, p. 122, pl. 31, fig.  
 2, 1828 (Mohila).

? Pleuronectes albus Schneider, Syst.  
 Ichth. Bloch, p. 159, 1801 ~~Explanatio~~  
~~Descriptions~~ (on Gronow, Zoophylacii,  
 p. 75, no. 255, 17. — ; type locality:  
 Amboina).



Previously only known from Queensland. Our examples agree with Gunther's account of Richardson's type. The "very numerous undulated and irregular bluish longitudinal lines" have apparently largely faded, though there are still traces of them in some of the specimens. Likewise the "whitish band across the basal portion of the caudal fin". We do not find the black spot ~~apex~~ in the basal region of the last dorsal and anal rays. It is in the pale hind border to the pectoral that the most striking and constant character is found, and this will distinguish the species most any time. Although greatly different in the presence of 31 dorsal and 28 or 29 anal rays, besides the dorsals and anals without dark longitudinal bands we feel that this species is very close to Hepatus sohaln ( Forskål ), apparently only known from the Red Sea.



2482

? Pleuronectes maculosus Gray,  
Cat. Fishes Grenow, p. 89, 1854  
(type locality: Mari Americano).  
Pardachius pavoninus (not  
Lacépède) Pellegrin, Bull. Soc. Zool.  
France, vol. 39, p. 229, 1914  
(Madagascar).



Largely uniform dull brownish, becoming more or less dusky on back with age. Often pale or ochraceous tints in front of and around eye posteriorly, with traces of dark waved lines more or less horizontal. Iris brownish. Fins all more or less brownish, vertical ones dusky with age. In many examples of small size soft dorsal and anal each with 4 or 5 longitudinal, parallel dark bands. Others also show pale bluish or gray longitudinal band. Pectoral usually brownish with broad, even, pale, yellowish border posteriorly, always conspicuous.



Pardachirus pavoninus (Lacépède)

Achirus pavoninus Lacépède, Hist.

Nat. Poiss., vol. 4, pp. 658, 660,

1802 (type locality: no locality,

"la collection de Hollande, cédée à la France"). — Cantor, Journ.

Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1207, 1849 (1850) (Pinang Sea).

— Kaup, Archiv Naturges., vol. 24, pt. 1, p. 102, 1858 (reference).

— Bleeker, Atlas Ichth. Ind.

Néerl., vol. 6, p. 24, pl. (10) 241,

fig. 1, 1866-72 (Java, Sumatra,

Nias, Pinang, Singapore, Banca,

Celebes, Batjan, Ceram, Aru);  
Verh. Kon. Akad. Wet. Amsterdam, vol. 18 (Chine), p. 3, 1879 (China).

— Day, Fishes of India, pt. 3, p. 427, pl. 93, fig. 2, 1877 (Port

Blair); Fauna British India,

Fishes, vol. 2, p. 446, fig. 160, 1889.

— Chu, Biol. Bull. St. John's Univ. Shanghai, no. 1, p. 92, Jan. 1931 (reference). — Chabanaud, Zool. Anzeiger, vol. 93, pt. 3/4, 1931, p. 102 (diagnosis in key).



Depth  $1 \frac{4}{5}$  to  $2 \frac{1}{8}$ ; head  $3 \frac{1}{2}$  to  $3 \frac{2}{3}$ , width  $2 \frac{1}{8}$  to  $2 \frac{1}{2}$ . Snout  $1 \frac{1}{3}$  to  $1 \frac{2}{5}$ ; eye  $4 \frac{1}{8}$  to  $6 \frac{1}{8}$ ,  $3 \frac{1}{8}$  to  $4 \frac{1}{2}$  in snout,  $1 \frac{1}{2}$  to  $1 \frac{7}{8}$  in interorbital; teeth 18 to 26 in jaws; maxillary  $3 \frac{1}{2}$  to  $3 \frac{4}{5}$  in head; interorbital  $2 \frac{7}{8}$  to 3, convexly elevated; opercle, preopercle flange and humeral arch striate, striae rather weak. Gillrakers  $6 + 12$ , short points.

Scales rather broadly ovoid, firmly adherent, with very fine, numerous circuli; 5 to 10 rows of apical or subapical tubercles, with 6 to 8 series transversely.

IX,  
D. 25, 1 or 26, 1, ninth spine  $1 \frac{2}{5}$  to  $1 \frac{3}{4}$  in head, first branched ray  $1 \frac{1}{2}$  to  $1 \frac{2}{3}$ ; A. III, 23, 1 or 24, 1, third spine 2 to  $2 \frac{2}{5}$ , first branched ray  $1 \frac{2}{5}$  to  $1 \frac{3}{4}$ ; caudal deeply emarginate or lunate, lobes extended in long points,  $2 \frac{1}{3}$  to  $2 \frac{2}{5}$  in combined head and body; least depth of caudal peduncle  $2 \frac{2}{3}$  to  $2 \frac{3}{4}$  in head; pectoral I to  $1 \frac{1}{8}$ ; ventral  $1 \frac{1}{4}$  to  $1 \frac{2}{3}$ ; caudal spine  $5 \frac{1}{4}$  to  $5 \frac{3}{4}$ .



2484

Pleuronectes pavoninus Shaw, General  
Zool., vol. 4, p. 310, 1804.

Pardachius pavoninus Günther,  
Cat. Fishes Brit. Mus., vol. 4, p.  
479, 1862 (Pinang, Singapore, Moluccas).  
— Schmeltz, Cat. Mus. Godeffroy,  
no. 4, p. 24, 1869 (Pelew Islands).  
— Günther, Cruise of Curaçoa,  
Brenchley, p. 410, 1873 (Solomon  
Islands). — Macleay, Proc. Linn.  
Soc. New South Wales, <sup>vol. 6,</sup> p. 136, 1881  
(Cape Grenville). — Meyer, Anal.  
Soc. Españ. Hist. Nat. Madrid, vol.  
14, p. 40, 1885 (North Celebes; Cebu).  
— Seale, Occas. Pap. Bishop Mus.,  
vol. 4, no. 1, p. 86, 1906 (Fate'). —  
Evermann and Seale, Bull. Bur.  
Fishes, vol. 26, p. 107, 1906 (1907)  
(Bacon). — Günther, Journ. Mus.



Largely dull chocolate to umber brown, with more or less dull uniform tinge. Many fine dark or dusky longitudinal parallel lines on head and body. Sometimes a pale ill defined interocular band. Edge of opercle or gill opening sometimes narrowly dark. Iris yellowish brown. Caudal spine often with groove dusky to blackish. Dorsals, anals and caudal largely dusky brown, former 2 fins with narrow blue border and also narrow basal line to same of each basally. Base of caudal with pale whitish transverse band, variously distinct, often not evident. Sometimes caudal with traces of dark spots. Paired fins uniformly brown, variously dark to dusky.

Red Sea, Mauritius, Madagascar, East Indies, Philippines, Riu Kiu,  
Polynesia,  
Japan, Micronesia, Hawaii.



Godéffroy, vol. 8, pt. 16, p. 347, 1909  
(New Pommernia, Solomons,  
Tonga). — Kendall and Goldborough,  
Mem. Mus. Comp. Zool., vol. 26, p.  
332, 1911 (Tonga). — Snyder,  
Proc. U. S. Nat. Mus., vol. 42, p.  
517, 1912 (Okinawa). — Weber,  
Siboga Exped., vol. 57, p. 439, 1913  
(Macassar; Saleyer; Rotti; 18 to 45 meters).

— Ogilby, Mem. Queensland Mus.,  
vol. 5, p. 142, pl. 16, 1916 (Raine Island).  
— Fowler and Bean, Proc. U. S. Nat. Mus., vol.  
62, pt. 2, p. 67, 1922 (Bogamboanga).  
— Norman, Biol. Res. Endeavour,  
vol. 5, pt. 2, June 15, 1926 (compiled);

Rec. Indian Mus., vol. 30, pt. 2, p. 187,  
fig. 6, July 1928 (Andaman). —

↑ — Fowler, Mem. Bishop Mus., vol. 10,  
p. 94, 1928 (Faté; Tonga).

Saleyer, Rotti, New South New  
Guinea). — McCulloch, Austral.



Godeffroy, vol. 8, pt. 16, p. 347, 1909  
(New Pommernia, Solomons,  
Tonga). — Kendall and Goldborough,  
Mem. Mus. Comp. Zool., vol. 26, p.  
332, 1911 (Tonga). — Snyder,  
Proc. U. S. Nat. Mus., vol. 42, p.  
517, 1912 (Okinawa). — Weber,  
Siboga Exped., vol. 57, p. 439, 1913  
(Macassar; Saleyer; Rotti; 18 to 45 meters).

— Ogilby, Mem. Queensland Mus.,  
vol. 5, p. 142, pl. 16, 1916 (Raine Island).  
— Fowler and Bean, Proc. U. S. Nat. Mus., vol.  
62, pt. 2, p. 67, 1922 (Sumbawa).  
— Norman, Biol. Res. Endeavour,  
vol. 5, <sup>pt. 2, June 15,</sup> p. 288, 1926 (compiled);

Rec. Indian Mus., vol. 30, pt. 2, p. 187,  
fig. 6, July 1928 (Andamans). —

→ Weber and Beaufort, Fishes Indo  
— Cape Austral. Archip., vol. 5, p. 165, fig.  
(Muzant 6, 1929 (Singapore, Madura, Celebes,  
Saleyer, Rotti, Aru, South New  
Guinea). — McCulloch, Austral.



band 20, 1870, p. 784 (Red Sea). — Cape Antstral.  
Zorn. Soc. Sci. Lisbon, 1871, p. 200 (Mugent 6, 1929 (Saleyev, 4.1.1929))



Depth  $1 \frac{7}{8}$  to  $2 \frac{1}{10}$ ; head  $3 \frac{1}{3}$  to  $3 \frac{4}{5}$ , width  $1 \frac{7}{8}$  to  $2 \frac{1}{8}$ . Snout  
 $1 \frac{1}{5}$  to  $1 \frac{2}{5}$ ; eye  $3 \frac{3}{4}$  to 5,  $2 \frac{3}{4}$  to <sup>2</sup>~~5~~ in snout,  $1 \frac{1}{5}$  to  ~~$1 \frac{4}{5}$~~  in  
interorbital; teeth <sup>to 22</sup>20 in each jaw; maxillary  $3 \frac{2}{3}$  to <sup>2/5</sup>4 in head; interorbital  
 $2 \frac{4}{5}$  to <sup>5</sup> $3 \frac{1}{8}$ , convexly elevated; opercle, preopercle flange and humeral  
arch with rather obsolete striae. Gill rakers <sup>to 8</sup>6 + <sup>or 14</sup>13, low, small points.

Scales small, ovoid, circuli extremely fine; apical denticles II to  
<sup>25</sup>~~24~~, with 6 <sup>to 12</sup>~~or 1~~ series of basal elements transversely as low cusps.

D. IX, 25, <sup>to</sup>~~26~~, <sup>1/2</sup>~~26~~, <sup>1</sup>~~26~~, ninth spine  $1 \frac{7}{8}$  to 2 in head, first ray  $1 \frac{1}{5}$   
to  $1 \frac{4}{5}$ ; A. III, 23, <sup>6</sup>~~24~~, <sup>1</sup>~~24~~, third spine  $2 \frac{1}{3}$  to  $2 \frac{2}{3}$ , first ray  
 $1 \frac{4}{5}$  to <sup>1/10</sup>2; caudal deeply emarginate, lunate, <sup>1/8</sup> $2 \frac{2}{5}$  to  $2 \frac{2}{3}$  in combined head  
and body; least depth of caudal peduncle <sup>1/2</sup> $2 \frac{3}{5}$  to  $2 \frac{7}{8}$  in head; pectoral  
I to  $1 \frac{1}{6}$ ; ventral ~~I  $1 \frac{1}{5}$~~  to  $1 \frac{1}{3}$ ; caudal spine  $2 \frac{7}{8}$  to 5.



Mus. Mem., no. 5, pt. 2, p. 284, Sep.  
10, 1929 (reference).

Achirus maculatus <sup>Kuhl and Van Hasselt, in</sup> Bleeker, Nat.  
Geneesk. Arch. ~~Nat. Geneesk. Arch.~~ Ned.  
Indië", vol. 2, p. 509, 1845 (type  
locality: Batavia).

~~Pardachirus~~

Achirus barbatus (not Lacépède?)  
Thiollière, Faune Woodlark, p.  
210, 1857 (Woodlark Island).

Achirus napai (Montrouzier)  
Thiollière, Faune Woodlark, p.  
210, 1857 (name in ~~xxxx~~ synonymy).

Pardachirus marmoratus (not  
Lacépède?) Kner, Reise Novara, Fische,  
p. 290, 1865.



We think the specimens listed below are likely the Acanthurus  
pyroferus Kittlitz. According to Valenciennes the figure is 154mm. long,  
snout rather pointed, color brown, caudal and anal blackish with yellow  
border to former and with yellow, vertical, shoulder patch. However none  
of our examples have the "caudal with a broad yellow posterior margin"  
as Günther translates. It is likely his Acanthurus tennantii is the same,  
though the dorsal is given with 23 soft rays and the anal with 22 his  
specimen was a skin but 127mm. long. It is also said to have the caudal  
with "a broad white margin".



~~Lisseraggodes persimilis (Günther)~~

Solea persimilis Günther, Mus.

Godeffroy, Jour., vol. 8, pt. 16, p. 346,  
1909 (type locality: New Pomerania).

Lisseraggodes persimilis Fowler, Mem.

Bishop Mus., vol. 10, p. 94, 1928  
(compiled: error).



2488

Depth  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; head  $3\frac{2}{3}$  to  $4\frac{1}{2}$ , width 3 to  $3\frac{1}{4}$ . Snout end to lower ~~eye~~ <sup>orbit</sup>  $2\frac{7}{8}$  to  $3\frac{2}{5}$  in head; lower ~~eye~~ <sup>orbit</sup>  $5\frac{1}{2}$  to 7,  $1\frac{3}{4}$  to 2 in snout; upper ~~eye~~ <sup>orbit</sup>  $\frac{1}{5}$  to  $\frac{2}{3}$  in advance of lower orbit; mouth cleft reaches scarcely to or  $\frac{2}{5}$  in lower eye, curved, length  $2\frac{4}{5}$  to  $3\frac{1}{4}$  in head from snout end; interorbital  $1\frac{1}{4}$  to 2 in lower orbit, slightly concave. Gill rakers vestigial or absent; gill filaments long as lower orbit.

Scales 68 to 71 in lateral line from over gill opening to caudal base (8 or 9 more forward on head to dorsal intersection); 33 or 34 above, 36 to 38 below. Vertical fins all scaly basally. Scales all ctenoid. Scales with 34 to 45 basal radiating striae; 5 to 9 slender apical denticles; circuli fine. Lateral line complete, present on both sides.

D. 64 to 66, fin height  $1\frac{1}{2}$  to



2489

$1\frac{3}{5}$  in head; A. 50 or 51, fin height  $1\frac{1}{2}$  to  $1\frac{3}{5}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , convex behind; depth of caudal peduncle 2 to  $2\frac{1}{8}$ ; ventral 2 to  $2\frac{1}{3}$ .

Variably brown to russet or dark brown on right side, with innumerable very variable dark to blackish rings, many with black central dot, some often enclosing pale or gray white blotches. Along fins marginally rings smaller, more numerous and crowded. In young coloration all made up of small-dark spots with paler areas and fins with dark to blackish spots. Left side whitish, fins brownish submarginally.

Andamans, Malaya, East Indies, Philippines, Micronesia, Melanesia, Polynesia, China, Riu Kiu, Queensland.



20312. Bolinao Bay. May 10, 1909.<sup>2490</sup>  
Length 108 mm.

1 example. Capunay fugaw, Mindanao.  
May 9, 1908. Length 65 mm.

11342, 11343. Cebu market, Cebu.  
April 4, 1908. Length 150 to 170 mm.

15487. Cebu market. March 26, 1909.  
Length 141 mm.

21754. Cebu market. March 28, 1909.  
Length 64 mm.

5725. Cebu market. August 12, 1909.  
Length 171 mm.

11563 to 11566. Cebu market.  
August 26, 1909. Length 70 to 150 mm.

13868 [1877]. Cebu market.  
August 31, 1909. Length 64 mm.

5161. Jolo market, Jolo. March 6,  
1908. Length 165 mm.



8824. Malcochin River, Pagapas<sup>2491</sup>  
Bay, Luzon. February 20, 1909. Length  
128 mm.

12640, 12641. Santiago River, Pagapas  
Bay, Luzon. February 20, 1909.  
Length 160 to 161 mm.



Pardachirus

~~Aseraggodes~~ poropterus (Bleeker) 2492

Achirus poropterus Bleeker, Natuurk.  
Tijds. Nederl. Indië, vol. 1, p. 410, 1851  
(type locality: Batavia; Padang);  
Atlas Ichth. Ind. Néerl., vol. 6, p. 24,  
pl. (15) 246, fig. 2, 1866-72 (Java,  
Sumatra, Nias, Amboina). — Jouan,  
Mém. Soc. Sci. Nat. Cherbourg, vol. 13,  
p. 275, 1867 ( ). —

Regan, Trans. Zool. Soc. London, ser. 2,  
vol. 12, Zool., pt. 3, p. 235, 1908 (Malaku,  
Maldives, 27 fathoms). — Weber and  
Beaufort, Fishes Indo Austral. Archip.,  
vol. 5, p. 162, fig. 44, 1929 (Simalur;  
Java; Karakelang; Flores; Ceram).

Aseraggodes poropterus Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 103, 1858  
(reference).

Solea (Achirus) poropterus Klunzinger,  
Sitzs. Ber. Akad. Wiss. Wien, Math. nat.  
Kl., vol. 80, p. 408, 1879 (1880) (Port  
Darwin).

Solea (Achirus) poroptera Macleay, Proc.  
Linn. Soc. New South Wales, vol. 9, p. 51,  
1884.



Pardachirus poropterus Norman,  
Rec. Indian Mus., vol. 30, pt. 2,  
p. 188, July 1928 (diagnosis in  
key).



Body largely uniform chocolate brown. Usually large triangular darker area at upper humeral region, often only as angular and usually enclosing an area twice or extent of eye, sometimes rarely less than eye. Iris brownish. Edge of opercular membrane along gill opening often dusky narrowly. Iris brown. Dorsals and anals largely dusky brown, deeper than body, each sometimes show narrowpale blue gray basal line and edges of fins brighter blue narrowly. Caudal largely dusky medially and behind, base whitish or pale gray and upperand lower edges of fins brownish. Pectoral dusky or brownish largely, terminally above with broad pale blotch, light brown. Ventral neutral dusky. Groove and edges of caudal spine blackish.



2494

Achirus thepassi Bleeker, Naturk.  
Tijds. Nederl. Indië, vol. 6, p. 500,  
1854 (type locality: Amboina);  
Atlas Ichth. Ind. Néerl., vol. 6, p.  
24, pl. (15) 246, fig. 4, 1866-72  
(Celebes; Amboina).

Solea thepassi Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 478, 1862  
(no locality). — Smith and Seale,  
Proc. Biol. Soc. Washington, vol.  
19, June 4, 1906, p. 82 (Mindanao).



Pardachirus rautheri (Chabanaud) <sup>2495</sup>

Achirus rautheri Chabanaud, Zool.  
Anzeiger, vol. 93, pt. 3/4, 1931, p. 95,  
figs. 1-2 (type locality: Port Darwin,  
North Australia).



2496

Genus Phyllichthys McCulloch

Phyllichthys McCulloch, Mem.

Queensland Mus., vol. 5, p. 66, July 10,  
1916. (Type Synaptura sclerolepis  
Macleay,

Dorsal and anal united with caudal.  
Ventral fins more or less joined  
by membrane, right one completely  
joined to anal.



2497

Phyllichthys punctatus McCulloch

Phyllichthys punctatus McCulloch,  
Mem. Queensland Mus., vol. 5, p. 67,  
July 10, 1916 (type locality: Busselton,  
South West Australia); Austral.  
Mus. Mem., no. 5, pt. 2, p. 286, Sep.  
10, 1929 (reference). — Horman, Biol.  
Res. Endeavour, vol. 5, pt. 5, p. 297,  
June 15, 1926 (compiled).



2499

Phyllichthys sclerolepis (Macleay)

Synaptura sclerolepis Macleay, Proc.  
Linn. Soc. New South Wales, Vol. 2, p.  
363, pl. 10, fig. 4, 1878 (type locality:  
Port Darwin, Northern Territory);  
vol. 6, p. 137, 1882.

Phyllichthys sclerolepis McCulloch,  
Austral. Mus. Mem., vol. 5, pt. 2,  
p. 286, Sep. 10, 1929 (reference).

Mem. Queensland Mus., vol. 5, p. 66,  
pl. 9, fig. 2, text-fig. 4, 1916 (

— Horman, Biol. Res. Endeavour,  
vol. 5, pt. 5, p. 297, June 15, 1926  
(compiled). — McCulloch,



2499

Genus Achiroides Bleeker

Achiroides Bleeker, Naturk. Tijds.  
Nederl. Indië, vol. 1, pp. 404, 411, 1850.  
(Type Achiroides melanorhynchus  
Bleeker, designated by Jordan, Genera  
of Fishes, pt. 2, p. 247, 1919.)

Eurypleura Kaup, Archiv Naturges.,  
vol. 24, pt. 1, p. 100, 1858. (Type Plagusia  
melanorhynchus Bleeker, designated  
by Jordan, Genera of Fishes, pt. 2,  
p. 282, 1919.)

Snout not forming prominent hook.  
Eyes on right side. Mouth small,  
twisted, somewhat curved. Minute  
teeth in jaws of left side only. Front  
nostril of colored side at end of  
tube, hind one with cutaneous flap;  
nostril of blind side a short tube.  
Gill membranes united, free from  
isthmus. Scales feebly stenoid on both  
sides of body. One straight axial  
lateral line on both sides. Scales



of blind side round corner of mouth and on chin replaced by fleshy tentacles. Lips of colored side with similar but shorter tentacles. Dorsal begins on snout. Dorsal and anal confluent with caudal. Rays of vertical fins divided or split at tips only. No pectorals. Ventrals short, rather broad based, free from each other and from anal.

Few species in Malaya, East Indies and Cambodia.



2501

Achiroides melanorhynchus (Bleeker)

Plagusia melanorhynchus Bleeker,  
Natuurk. Tijds. Ned. Indië, vol. 1, p.  
15, 1850 (type locality: Bandjermassing,  
Borneo).

Achiroides melanorhynchus Bleeker,  
Verhand. Batavia. Genoots., no. 9, vol.  
24, p. 19, 1852 (Bandjermassing).

Achiroides melanorhynchus Bleeker,  
Atlas Ichth. Ind. Néerl., vol. 6, p. 26,  
pl. (15) 266, fig. 6, 1866-72 (Sumatra;  
Borneo). — Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 5, p. 180,  
fig. 49 (head), 1929 (Borneo). — Chevey,  
Inst. Océan. Indo Chine, 19<sup>e</sup> note,  
p. 28, Aug. 25, 1932 (Cochin China).

Eurypleura melanorhyncha Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 100, 1858  
(reference).



2502

Synaptura melanorhyncha Günther,  
Cat. Fishes Brit. Mus., vol. 4, p. 487,  
1862 (Gambaja). — Volz, Zool.  
Jahrb. Abth. Syst., vol. 19, p. 380,  
1903 ( ). — Tirant,  
Serv. Océan. Pêch. Indo Chine, 6<sup>e</sup> note,  
p. 172, 1929 (Thudamot).

Synaptura achira Duncker, Mitteil.  
Naturh. Mus. Hamburg, vol. 21, p. 168,  
1904.



2503

Achiroides leucorhynchus Bleeker

Achiroides leucorhynchus Bleeker, Ned.  
Tijds. Ned. Indië, vol. 1, p. 411, 1850 (1851)  
(type locality: Surakarta, central Java, in <sup>rivers</sup>),  
Verh. Batavia. Genoot., no. 9, vol. 24, p.  
20, 1852 (Surakarta).

Achiroides leucorhynchus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 26, pl. (13)  
264, fig. 3, 1866-72 (Java). — Weber  
and Beaufort, Fishes Indo Austral.  
Archip., vol. 5, p. 181, 1929 (compiled).

Eurypleura leucorhyncha Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 100, 1858  
(note).

Synaptura leucorhyncha Günther, Cat.  
Fishes Brit. Mus., vol. 4, p. 486, 1862  
(no locality).



Genus Heteromycterus Kaup

Heteromycterus Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 103, 1858.  
(Type Heteromycterus capensis  
Kaup, monotypic.)

Amate Jordan and Starks, Proc.  
U. S. Nat. Mus., vol. 31, p. 228, 1906.  
(Type Archius japonicus Schlegel,  
orthotypic.)

Monodichthys Chabanaud, Bull.  
Mus. Hist. Nat. Paris, 1925, p. 356.  
(Type, Monodichthys proboscideus  
Chabanaud, monotypic.)



748  
4838. Cape Kait, Libani Island,  
Celebes. December 29, 1909. Length 104 mm.  
21010. Limbe Strait, Celebes. November  
10, 1909. Length 87 mm.



Snout prolonged into hook.<sup>2505</sup>  
Anterior nostril of blind side  
dilated and fringed. Inter-  
branchial septum perforated.  
Dorsal rays extend to end of  
snout. Ventrals markedly  
asymmetrical, on right side  
median, elongate and joined to  
anal.



l.<sup>2</sup>  
ph.

Dorsal and anal confluent with caudal.  
ph.<sup>1</sup> Pectoral present, well  
developed or rudimentary.

Phyllichthys.

ph.<sup>2</sup> Pectoral absent. Achiroides.

a.<sup>2</sup>



2506

Heteromycterus capensis Kaup

Heteromycterus capensis Kaup, Archiv  
Naturges., vol. 24, pt. 1, p. 103, 1858  
(type locality: no locality [= Cape of  
Good Hope]). — Chabanaud, Ann.  
Mag. Nat. Hist., ser. 9, vol. 20, p.  
525, nov. 1927 (type).

Lichius capensis Boulenger, Marine  
Investig. South Africa, vol. 1, p. 2,  
1898 (False Bay); — Barnard, Ann.  
South African Mus., vol. 21, pt. 1, p. 404,  
June 1925 (Saldanha Bay, False Bay,  
East London).

— Von Bonde, Fisher. Mar. Biol. Surv.  
South Africa, Rep. no. 2, pt. 1, p. 17, 1922  
(reference).



2507

Heteromycteris hartzfeldii (Bleeker)

Achirus hartzfeldii Bleeker, Natuurh.  
Tijds. Nederl. Indië, vol. 4, p. 123,  
1853 (type locality: Amboina). —

Evermann and Seale, Bull. Bur. Fisher.,  
vol. 26, p. 106, 1906 (1907) (Philippines).

Achirus hartzfeldii Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 6, p. 25, pl.  
(15) 246, fig. 1 (Sumatra, Amboina,  
Flores, Timor). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol. 5,  
p. 160, fig. 45, 1929 (Malacca Straits,  
Bawean, Obi, British India), p.  
429 (reference).

Liseraggodes hartzfeldii Kaup, Archiv  
Naturgesch., vol. 24, pt. 1, p. 103, 1858  
(reference). — Jordan and Snyder,  
Annot. Zool. Japon., vol. 3, p. 122,  
1901 (Nagasaki).

Solea hartzfeldii Günther, Cat. Fishes  
Brit. Mus., p. 471, 1862 (no locality). —

~~Kyström, Bih. Svensk. Vet. Akad.  
Handl. Stockholm, vol. 13, of 4, p.  
42, 1887 (Nagasaki).~~



2508

Solea hartzfeldi Evermann and Seale,  
Bull. Bur. Fisher., vol. 26, p. ,  
1906 (Bacon).

Heteromycterus hartzfeldi Chabanaud,  
Ann. Mag. Nat. Hist., ser. 9, vol. 20,  
p. 526, 1927 (paratype).



2509

Depth  $2\frac{1}{4}$  to  $2\frac{3}{4}$ ; head  $3\frac{4}{5}$  to 4, width  $4\frac{1}{4}$  to  $4\frac{1}{2}$ . Snout end to lower orbit  $2\frac{1}{8}$  to  $2\frac{1}{4}$  in head; lower orbit  $5\frac{1}{2}$  to 6, 2 to  $2\frac{1}{3}$  in snout; upper orbit advanced  $\frac{1}{2}$  to  $\frac{2}{3}$  of lower orbit; mouth cleft extends  $\frac{2}{5}$  to  $\frac{1}{2}$  below lower eye, curved, length  $3\frac{2}{3}$  to 4 in head, flap of upper jaw well overlapping mandible; interorbital  $\frac{3}{5}$  to  $\frac{2}{3}$  of lower orbital diameter, concave.

No gill rakers; gill filaments equal lower orbit.

Scales 80 to 83 in lateral line from above gill opening to caudal base (10 or 11 more forward on head to dorsal intersection); 28 or 29 above, 24 to 26 below. Scales all stenoid. Scales with 10 to 12 basal radiating striae; 11 or 12 slender divergent apical denticles, with 3 or 4 transverse series of basal elements; circuli fine. Lateral line complete, present on both sides.

D. 84 to 90, fin height 2 to  $2\frac{1}{4}$  in



head; A. 59 to 62, fin height <sup>2510</sup>  
 $1\frac{4}{5}$  to  $2\frac{1}{2}$ ; caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ ,  
convex behind; least depth of  
caudal peduncle  $2\frac{3}{5}$  to  $2\frac{3}{4}$ ;  
ventral  $1\frac{7}{8}$  to  $2\frac{1}{8}$ .

Dark brown on right side,  
mottled with still darker. Row  
of 5 or 6 large ocelli on body  
below dorsal base and row of  
4 or 5 above anal base, also row  
of 5 along lateral line axially,  
these often double. Dark or  
blackish borders of ocelli often  
speckled or dotted with white.  
Vertical fins frequently with  
dark to blackish speckles. Orbits  
dark slate. Left side whitish,  
vertical fins with faint dark dots.

Malacca, East Indies, Philippines,  
Japan.



2511

One example. Cotabato, below  
mouth of Mindanao River,  
Mindanao. May 20, 1908. Length  
54 mm.

6 examples. Davao, Mindanao.  
May 16, 1908. Length 70 to 86 mm.

8 examples. Hinunangan Beach,  
Leyte. July 30, 1909. [1794] Length  
31 to 77 mm.

1 example. Mantaguin Bay,  
Palawan. April 2, 1909. Length 70  
mm.

1 example. [823] Port Bais, Negros.  
March 31, 1908. Length 70 mm.

1 example. Subig Bay, Olongapo.  
January 7, 1908. Length 78 mm.

1 example. Verde del Sur, Palawan.  
April 6, 1909. Length 50 mm.



15710. Sanguisapo Island. 747  
February 24, 1908. Length 71 mm.

22768 to 22770. Sitaniki Reef.  
September 24, 1909. Length 53 to 88 mm.

3921. Sitaniki wharf. February 26,  
1908. Length 107 mm.

3912. South Lagoon, Tournindao.  
February 26, 1908. Length 81 mm.

16021. Sulada Island. September 18,  
1909. Length 87 mm.

19228. Tapiantana Island. September  
13, 1909. Length 96 mm.

472. Tomahu Island. December 12, 1909.  
Length 85 mm.

4774. Tournindao Island. February 26,  
1908. Length 80 mm.

8673. Tutu Bay, Jolo Island, second  
anchorage. September 19, 1909. Length 92  
mm.

22769. Sitaniki Reef. Sep. 24, 1909.  
Length 88 mm.



2512

Heteromycteris oculus (Alcock)

Solea oculus Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 285, pl. 18, fig. 3, 1889 (type locality: south west of Puri 32 miles, Bengal Bay, 7 fathoms). — Johnstone, Ceylon Pearl Oyster Fish., Suppl. Rep. 15, p. 206 (1904).

Solea (Achirus) oculus Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Heteromycteris oculus Chabanaud, Ann. Mag. Nat. Hist., ser. 9, vol. 20, p. 526, 1927 (Bengal Bay).

— Horman, Rec. Indian Mus., vol. 30, pt. 2, July 1928 (p. 190, fig. 8) (Hebran, Ganjam, Puri, Sundarbans, 9 to 14 fathoms).



2513

Heteromycteris japonicus (Schlegel)  
Achirus japonicus Schlegel, Fauna  
Japonica, Poiss., pts. 10-14, p. 186,  
1846 (type locality: seas of Japan).

Solea japonica Günther, Cat. Fishes  
Brit. Mus., vol. 4, p. 471, 1862  
(compiled).

Aseraggodes japonicus Jordan and  
Snyder, Annot. Zool. Japon. Tokyo,  
vol. 3, p. 122, 1901 (<sup>Misaki</sup>  
reference).

Usinosita japonica Jordan and  
Evermann, Proc. U. S. Nat. Mus.,  
vol. 25, p. 366, 1902 (Keelun, Formosa).

Amate japonica Jordan and Starks,  
Proc. U. S. Nat. Mus., vol. 31, p. 228,  
fig. 23, 1906 (Wakanoura, Tokyo,  
Tsuringa, Misaki, Kobe, Nagasaki).  
— Snyder, Proc. U. S. Nat. Mus., vol.  
42, 1912, p. 440 (Tokyo, Tanegashima,  
Kagoshima, Nagasaki). — Jordan,  
Tanaka, Snyder, Journ. College Sci.



Tokyo, vol. 33, p. 322, <sup>fig. 281,</sup> 1913 (reference)  
— Izuka and Matsura, Cat. Zool.  
Spec. Mus. Tokyo, Vertebr., p. 115,  
1920 (Tokyo).

Heteromycteris japonicus Reeves, Journ.  
Pan Pac. Res. Inst., vol. 2, no. 3, p.  
14, July - Sep. 1927 (name).

Heteromycteres japonica Schmidt and  
Lindberg, Bull. Acad. Sci. U. R. S. S.,  
1930, p. 1149 (Tsuringa).

Heteromycteris japonica Schmidt,

Chabanaud, Ann. Mag. Nat. Hist., ser. 9,  
vol. 20, p. 527, nov. 1927 (southern Japan)

Nyström, Ark. Svensk. Vet. Akad.  
Handl. Stockholm, vol. 13, aft. 4, no. 4,  
p. 42, 1887 (Nyström).

~~Proc. U. S. Nat. Mus., vol. 13, p. 11,~~

Aseraggodes hartzfeldii Jordan and  
Snyder, Annot. Zool. Japon., vol. 3, p. 122,  
1901 (reference).



2514

Tokyo, vol. 33, p. 332, <sup>fig. 281,</sup> 1913 (reference)  
— Izuka and Matsura, Cat. Zool.  
Spec. Mus. Tokyo, Vertebr., p. 115,  
1920 (Tokyo).

Heteromycteris japonicus Reeves, Journ.  
Pan Pac. Res. Inst., vol. 2, no. 3, p.  
14, July - Sep. 1927 (name).

Heteromycteres japonica Schmidt and  
Lindberg, Bull. Acad. Sci. U. S. S. S. R.,  
1930, p. 1149 (Tsuringa).

Heteromycteris japonica Schmidt,  
Trans. Pac. Comm. Acad. Sci. U. S. S. R.,  
vol. 2, p. 128, 1931 (Misaki).

Achirus hartzfeldi (not Bleeker)  
Nyström, Bih. Svensk. Vet. Akad.  
Handl. Stockholm, vol. 13, aft. 4, no. 4,  
p. 42, 1887 (Nyström).

~~Achirus hartzfeldi Nyström, Bih. Svensk. Vet. Akad. Handl. Stockholm, vol. 13, aft. 4, no. 4, p. 42, 1887 (Nyström).~~

Aseraggodes hartzfeldii Jordan and  
Snyder, Annot. Zool. Japon., vol. 3, p. 122,  
1901 (reference).



bund 28, abth. 1, 1860, p. 145 (Java).

Tetragonopterus (Rabdophorus) speculum

Bleeker, Atlas Ichth. Ind. Néerl., vol. 9.



Solea harzfeldii Smith and Pope,<sup>2515</sup>  
Proc. U. S. Nat. Mus., vol. 31, p.  
498, 1906 (Kagoshima).



Mem. Mus. Comp. Zool., vol. 35, 1912, p.  
117 (Rikitea, Mangareva, Gambier  
Islands). <sup>1</sup>/<sub>m</sub> Pellegrin, Bull. Soc. Zool.  
France, vol. 39, 1914, p. 229 (Nossi Bé,  
Madagascar). <sup>1</sup>/<sub>m</sub> Melpes, Ceylon Administrat. Rep., 1921,  
pp. E7, E8.

Lethrinus longirostris Playfair, Fishes  
of Zanzibar, 1866, p. 44, pl. 7, fig. 2.

Zanzibar. <sup>1</sup>/<sub>m</sub> Boulenger, Proc. Zool.  
Soc. London, 1887, p. 658 (Muscat).

Lethrinus ramak (not Forsk.)

Klunzinger, Verhandl. zool. botan.

Gesellsch. Wien, vol. 20, 1870, p. 752  
(Red Sea).

Lethrinus acutus Klunzinger, Fische  
Roth. Meer., 1884, p. 39, pl. 7, fig. 1. Roseir.

<sup>1</sup>/<sub>m</sub> Steindachner, Denkschr. Akad. Wiss.  
Wien, vol. 71, pt. 1, 1907, p. 133 (Tamarida,

Shotra). <sup>1</sup>/<sub>m</sub> Fowler, Proc. Acad. Nat. Sci.

Philadelphia, 1925, p. 242 (Delagoa Bay).